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THE

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FOR OCTOBER 1860.

ART. I.—*A Statistical Inquiry into the Causes, Symptoms, Pathology, and Treatment of Inversion of the Womb.* By CHARLES A. LEE, M. D.

INVERSION of the womb is fortunately of such rare occurrence, that few physicians can be said to be practically acquainted with it. Many, in an extensive, life-long obstetric practice, have never met with a single instance. Others, have only now and then seen a case in consultation. In lying-in hospitals it is nearly, if not quite, unknown. The annals of the Dublin Lying-in Hospital and those of the London Maternity Charity together, do not show a single instance of the accident in a total of more than 140,000 labours. It is evident, then, that the affection can only be studied statistically, and not clinically. No one can ever expect to observe cases enough to become an authority on the subject; and hence, perhaps, it is, that there is so much obscurity and vagueness, as well as diversity, in the expressed opinions regarding its causes, pathology, and treatment. But however rare the accident may be, it is one which may happen to the most experienced obstetrician, as it did actually occur in the practice of the late Prof. Dewees. As it is one, moreover, so extremely hazardous to life, or, if the woman survive, entails such a vast amount of suffering, that it becomes the imperative duty of every physician to make himself fully acquainted with what is known regarding it, that he may be prepared to prevent, or if already existing, to pursue the most appropriate treatment. The present paper is not designed as a monograph, but rather as a collection of materials for such an essay at some future time. It originates in a desire to contribute something towards the elucidation of uterine inversion, and possibly to establish such principles and rules as may hereafter aid in the decision of questions connected therewith. In the attainment of this end, I shall present a synopsis, as brief as is deemed

consistent with my object, of such cases of inversion of the womb as are at present accessible to me, gathered from various sources, and authenticated by the names of the different reporters, together with such deductions as may, it is believed, be legitimately derived from them. With greater diligence the number of cases might have been considerably increased, but they are, perhaps, sufficiently numerous to answer our purpose. The results, in all probability, would not greatly vary, even if at all, by a wider and more comprehensive deduction. It may be, that in some instances, the same case may be reported more than once, in consequence of the references not being in all cases as exact as could be wished. Great care, however, has been taken to secure all possible accuracy.

Another object had in view, in the prosecution of this inquiry, has been to ascertain under what circumstances inversion generally occurs; the results of cases where reposition has not been effected; the effect of various modes of treatment, in chronic cases, where replacement has been impracticable, as by extirpation, ligature, excision; and, in short, all those facts connected with its causation, pathology, and treatment, which can be gathered from an analysis of a large number of examples. Considerable interest, moreover, has been excited of late in regard to the subject, from the fact that in several instances replacement has been effected several years after inversion occurred, and that too without endangering the life of the patient. There are other circumstances which seem to indicate that the time has arrived when the whole subject of *inversio uteri* needs to be resurveyed, and, if possible, more definite results arrived at than seem to have been hitherto attained, judging from the discordant views entertained by standard authorities on obstetric medicine.

Cases, moreover, occasionally occur, perhaps attended by a regular physician, where inversion of the womb at some future period is found to exist; and then the question naturally comes up, was the attendant physician guilty of inducing the accident, or did it occur from want of proper care, skill, or knowledge on his part? Did it actually happen at the time of delivery, or was there a partial inversion only, perhaps a mere dimpling of the fundus uteri, which afterwards gradually increased, until, on some sudden movement or muscular effort, it merged into complete inversion? In such a case, ought the practitioner to have discovered such partial inversion, if it existed at an early period? or what signs or symptoms would make it his imperative duty to institute a *vaginal* examination, in order to discover whether inversion existed or not? And, should it at length be found after days, or weeks, or months of suffering, that in all probability the patient had laboured under inversion ever since her confinement, would this furnish, in the present state of professional knowledge on the subject, just cause for blame, or possibly a prosecution for mal-practice? And again, suppose that a case of this kind should occur, where the symptoms from the very beginning, such as hemorrhage, nervous shock, great prostra-

tion, pain, &c., indicated something out of the usual course of things, and supposing they persisted for several weeks before any examination was made by the attending physician, and then complete inversion was discovered to exist; and suppose, what might very probably happen, that the husband of said patient should denounce the practitioner as guilty of ignorance, or great neglect, would an action against said husband for slander be entertained in any of our courts, and if so, what would be and ought to be enlightened medical testimony regarding the professional management of the case? All these questions may come up at any time in regard to these unfortunate cases, and the statistical survey and analysis we propose to make must, it is believed, throw more or less light upon them.

CASE 1. *Complete inversion*, projecting beyond the vulva, caused by *midwife pulling on the cord;* rapid delivery; great hemorrhage; convulsions; placenta had been separated after inversion by midwife; reposited without difficulty half an hour after by Dr. R. Lee, who states that this is the only case of complete inversion he ever saw, and he thinks "the accident is frequently if not invariably the consequence of pulling at the umbilical cord." Terminated fatally within a few minutes after reduction. (*Lectures on Midwifery*, by R. Lee, Am. ed. p. 410.)

CASE 2. *Complete inversion; fatal*—caused by pulling on the cord by midwife; whole womb and adherent placenta beyond the labia. Great hemorrhage; fatal in half an hour. (*Giffard*, quoted by Lee, p. 414.)

CASE 3. *Complete inversion*—from pulling on cord by midwife to deliver placenta; labour natural and easy; inversion was followed by convulsions, faintings, and great hemorrhage; fatal in half an hour. (*Chapman*, quoted by Lee, p. 414.)

CASE 4. *Complete inversion*—caused by an ignorant midwife pulling on the cord to deliver placenta; died immediately from hemorrhage. (*Smellie*, quoted by Lee, p. 415.)

CASE 5. *Complete inversion*—from pulling on cord by midwife, followed by speechlessness, imperceptible pulse, clammy sweats, deep and slow respiration, and death in a few minutes from hemorrhage. (*Smellie*, quoted by R. Lee, p. 415.)

CASE 6. *Complete inversion*—caused by pulling on cord; labour quick and natural; adherent placenta; traction made to extract and separate placenta, by which the womb was inverted, and caused to protrude beyond the vulva; great hemorrhage; death in one hour. (*Ramsbotham*, quoted by Lee, p. 416.)

CASE 7. *Complete inversion*—caused by traction on the cord by a midwife; labour easy; placenta adherent; attempts to extract it gave great pain; great hemorrhage, and sinking; reposited in an hour after by Prof. Meigs, after separating the placenta, the patient being pulseless, cold, suffering extremest distress, constant jactitation, and great thirst; recovered. (*Meigs' Females and their Diseases*, p. 232.)

CASE 8. *Complete inversion*—from pulling on cord by midwife; easy delivery; placenta adherent; one hour after accident uterus was discovered by Dr. Betton completely inverted and prolapsed, lying like a gum-elastic bottle between the thighs; patient pulseless; mind wandering, hemorrhage great; uterus was restored after the usual manner by firm pressure and indenting the fundus, in two or three minutes; resulted fatally in one hour after. (*Betton, in Am. Journ. Med. Sci*, vol. xix. 1836.)

CASE 9. *Complete inversion*—first child; midwife pulling at the cord; placenta adherent; uterus and placenta without the os externum; profuse hemorrhage, great exhaustion; placenta was separated and womb reposited; patient recovered with no unfavourable symptoms. (*Denman's Mid.*, p. 591.)

CASE 10. *Complete inversion; unreduced; fatal*—attended by midwife; inversion caused by pulling on the cord; placenta extracted with much force, and pain, followed by hemorrhage for 36 hours; at that time a physician was called, who found complete inversion of the womb, which resisted all attempts at reduction. Patient survived several months, was able to ride out, and attend to household affairs. Died at the end of a year. Autopsy disclosed the uterus entirely within the vagina, completely inverted, and but little exceeding the natural size. It was of a dark purple, veins much injected, marks of severe strangulation. (*N. B. Pickett, in Bost. Med. and Surg. Journ.*, vol. xxii. p. 95.)

CASE 11. *Complete inversion; unreduced*—natural slow labour, inversion from traction on cord very soon after delivery; placenta adherent; both uterus and placenta external to vulva. On the seventh day after, the womb is stated by Dr. Comstock to have been black, and covered with putrid coagula; fetor very offensive; serous discharge from tumour very profuse; no hemorrhage, though there was a loss of two or three pints of blood when the placenta was separated. A decoction of *Baptisia tinctoria* was applied to the tumour, and given internally with good effect. Fifty-four days after the accident, the uterus was contracted to the size of a large pear; colour white, substance firm; menstrual discharge continued. The patient was able to resume her former occupation, that of a dairy-maid, and enjoyed tolerable health. (*J. Comstock, Bost. Med. and Surg. Journ.*, vol. viii. p. 245.)

CASE 12. *Complete inversion*—great hemorrhage; not detected till two years afterwards, during which time she was greatly reduced by repeated attacks of hemorrhage. Dr. Meigs found, at that time, uterus of normal size, wholly within vagina, bled freely on pressure, not very sensible to touch; no attempts were made at reduction. Four years afterwards she became pregnant, uterus supposed by Dr. M. to have been spontaneously restored. (*Meigs, Females and their Diseases*, p. 237.)

CASE 13. *Complete inversion, except the neck*—delivery before the arrival of Dr. Levis, the physician; birth rapid; placenta was removed from vagina; great flooding; in two weeks much recovered; hemorrhage recurred often; five weeks after delivery the uterus was found inverted, lying within the vagina; no attempt was made at reduction; remained feeble for some time; afterwards became pregnant. Spontaneous reduction supposed by Prof. Meigs to have taken place as in the last case (*loc. cit.*, p. 239).

Two similar cases are related by Daillez (quoted by Crosse in his essay on *Inversion of the Womb*, and in *Dict. de Méd.*, vol. xxx. p. 458). In one case the reduction is said to have occurred at eight months, in the other eight years after the accident happened.

CASE 14. *Complete inversion*—natural labour; very sudden delivery by powerful uterine contraction, expelling the child with great force. Cord very short and twisted twice around the child's neck; placenta adherent; the placenta was separated, and attempts made at reduction without success, owing to contraction of cervix. Hemorrhage not profuse. Recovered. (*Denman's Mid.*, p. 592.)

CASE 15. *Complete inversion; reduced; recovery*—occurring, as sup-

posed, ten days after childbirth; took place after violent efforts to pass the contents of the rectum; attended with pain, faintness and flooding; protruded externally; two days after severe flooding; attempts at reduction failed at first, but succeeded after one hour and a half, by moderate and continued pressure with the hand; recovery perfect. Womb at the time of inversion is stated to have been of the size of a large pear. (*Dewees' Midwifery*, p. 484; *Case of Dr. Teallier, Journ. Univ.*, Nov. 1823.)

CASE 16. *Partial inversion; unreduced; death*—first child; rapid delivery; under care of a midwife; hemorrhage and faintings followed; two hours after was found pulseless, cold, bathed in perspiration, breathing laborious and hurried; placenta adherent; within the vagina was a tumour resembling in shape and size the swelling at the bottom of a common black bottle, and over which the placenta was spread. Attempts at reduction caused great pain, and were consequently suspended. Death occurred in half an hour. Dr. Dewees, who reports the case, states that, in company with Dr. Rush, he dissected out the uterus, which was so flaccid as to turn inside out with as much facility as a soaked bladder. The fundus dipped into the body of the uterus about three inches. (*Dewees' Mid.*, p. 486.)

CASE 17. *Partial inversion*—speedy delivery; placenta came away spontaneously, followed by inversion of womb, great pain, and flooding, faintings, vomitings, &c.; attended by midwife. Four days afterwards, was found by Dr. Dewees almost exhausted; pulse too frequent to be counted, faintings, difficult breathing; insatiable thirst, frequent vomiting, severe hemorrhage, &c.; fundus of uterus within the vagina; attempts at reduction failing, the uterus was designedly completely inverted, when the symptoms abated, as anxiety, faintings, flooding, pain, &c. Nine months afterwards, womb still unreduced, the patient was found "perfectly well, suffers no inconvenience from uterus, menstruated regularly, had more or less discharge of mucus, tinged with blood, for four months; for the last four months has had no discharge of any kind; uterus contracted to natural size." Ten years after the patient was enjoying a very fair proportion of health; the menstrual flow had ceased for five years. (*Dewees' Mid.*, p. 489.)

CASE 18. *Partial inversion; spontaneous; reposited; recovery*—sudden delivery, Dr. Dewees in attendance; child large; placenta adherent, presented at os externum; fundus uteri was found inverted; restored in half a minute soon after it took place, the placenta being first separated; no unpleasant symptoms followed. (*Dewees' Mid.*, p. 490.)

CASE 19. *Partial inversion; replaced*—placenta extracted without force, in fifteen minutes; considerable pain and hemorrhage, faintness, frequent pulse; great anxiety, paleness, and cold sweats; fundus uteri just within os externum. Three hours after, when seen by Dr. Dewees, the fundus was restored without difficulty; recovered. (*Dewees' Mid.*, p. 491.)

CASE 20. *Partial inversion; unreduced*—first child, easy labour; caused by short umbilical cord twisted round neck; placenta adherent; bleeding not profuse; not much pain or exhaustion for fourteen hours; uterus within vagina; reduction not effected, though long continued efforts were made. Patient lived several years, though constantly troubled with pain, profuse hemorrhage, and leucorrhœa. (*R Lee, Lect. on Mid.*, p. 417.)

CASE 21. *Inverted eight months before seen*—caused by midwife pulling on cord; reduction found impracticable; fatal in a few months from hemorrhage and constant discharge; also much pain, &c. (*Mauriceau*, 1684, quoted by R. Lee, *loc. cit.*, p. 414.)

CASE 22. *Complete inversion*—occurred two days before Mauriceau saw it; found uterus irreducible, ultimately proved fatal. (*Mauriceau*, quoted by Lee, *loc. cit.*, p. 414.)

CASE 23. *Complete inversion*—half an hour after delivery, the womb was found external between the thighs, "as large as a foot-ball;" great flooding; uterus reposited, but died in less than an hour from shock and hemorrhage. (*Lucas*, quoted by Lee, *loc. cit.*, p. 415.)

CASE 24. *Complete inversion; unreduced*—three weeks after uterus was the size of a goose's egg and regularly contracting; great suffering from flooding and its consequences; result not stated (*Ramsbotham, Midwifery*).

Two cases of polypus uteri, mistaken by Sir Charles Bell and others for inverted uterus. (See *Lee's Midwifery*, pp. 412–13.)

CASE 25. *Complete inversion*—midwife in attendance; little hemorrhage, but severe shock, from which the patient died one hour after the occurrence of the accident; uterus very flaccid; was restored half an hour after delivery without difficulty. (*Ramsbotham, Process of Parturition*, p. 318.)

CASE 26. *Complete inversion; unreduced; death*—cause not stated; died from hemorrhage soon after delivery; uterus lying in the vagina; the placenta was separated after the inversion, and the uterus crowded into the vagina. (*Ramsbotham, loc. cit.*, p. 319.)

CASE 27. *Complete inversion; unreduced; recovery*—case seen some weeks after delivery—uterus was found contracted to its normal size; patient was sinking from an exhausting fetid discharge. Attempts to re-invert the uterus proved unsuccessful; suffered greatly from irregular hemorrhage, with occasional severe pain in the lumbar region, afterwards a copious, glairy leucorrhœal discharge and violent bearing-down pains; uterus was ligated by Dr. Ramsbotham, with the object of removing it, but owing to the violent symptoms which followed the ligature was removed at the end of twenty-four hours; afterwards the menstrual discharge became regular; no leucorrhœa, the patient regained her flesh, colour, and appetite, could take long walks, had no bearing down, nor difficulty in passing water; could move and sit without inconvenience; bowels regular; health become better than it had been for many years; nothing solid passed from the vagina after the operation. (*Loc. cit.*, p. 319.)

CASE 28. *Complete inversion.*—Dr. White, of Manchester, who reports the case, represents the uterus as the size of a child's head, but retained within the vagina, and never expelled through the external organs; restored by compressing and then pushing up the fundus; cause of inversion not stated. Recovered. (Quoted by *Meigs, on Females*, p. 234.)

CASE 29. *Complete inversion; recovery*—primipara; patient 24 years of age; natural labour, but protracted; pains very frequent and of unusual force; after delivery there was great exhaustion; in twenty minutes patient seized with severe and continued pain, attended with great restlessness, sickness of stomach, and profuse hemorrhage. On examination by Dr. Bissell, who attended the case, the *fundus uteri* was found inverted, and forced down into the neck and os tincæ, with a portion of the placenta attached, while much the larger part lay in the vagina. The womb was folded inwardly upon itself, but not entirely inverted; flooding very severe. The placenta was detached, in doing which the uterus was entirely inverted. The reduction was readily and easily effected in the usual manner, the hand being retained within the womb until it contracted, when it was slowly withdrawn. (*Dr. P. Bissell, in Trans. Med. Soc. N. Y.*, 1859, p. 171.)

CASE 30. *Complete inversion*—primipara, age 26; natural labour;

strong continued pains for two hours before the head was expelled, when they ceased altogether. Strong traction was made to deliver the body; soon after pressure was made with one hand over the pubis, while traction on the cord was made with the other; pains and severe hemorrhage, with sinking; pulselessness, and great restlessness followed; skin cold, patient looking pale and ghastly, and rapidly sinking from combined effects of shock and hemorrhage. The placenta was not detached till the uterus was reposited, which was effected without difficulty. The uterus was excited to contract by the presence of the hand within its cavity, when the placenta was separated and withdrawn, which arrested the hemorrhage, and, in some degree, the sufferings of the patient. She sank, however, and died from exhaustion in about an hour. (*Bissell, loc. cit.*, p. 174.)

CASE 31. *Complete inversion; unreduced; recovery*—eighth pregnancy, age 35; labour natural and easy; placenta adhered, which the midwife attempted to extract by traction on the cord, by which the womb was inverted. Thirty-six hours after Dr. Bissell, who was called in, found "a tumour nearly as large as a child's head, at full time, filling the vagina and resting on the perineum. It seems the after-birth was not removed till three-quarters of an hour after the birth of the child; after-pains, so-called, came on soon after, very severe and attended with copious flooding, great prostration, and a tendency to syncope. Thirty-six hours after delivery, the patient was found with cold clammy skin, feeble and very frequent pulse, face pale and ghastly, and uterus inverted; attempts to restore the uterus proved unsuccessful, owing "to the engorged and strangulated condition of the body of the womb, and the firm contraction of the neck and mouth of it." Five days after, the womb "was forced out five or six inches beyond the labia; was found of a dark purplish or livid colour, and possessing little sensibility." It was replaced, still inverted, in the vagina, and sustained by a T bandage. In two weeks she began to walk, and was soon able to be about house, and perform some of the duties of housekeeping. (*Bissell, loc. cit.*, p. 177.)

CASE 32. *Complete inversion*—fourth labour, which was natural and rapid; pelvis very large; cord was tied immediately; there succeeded a long expulsory pain, which inverted the womb and forced it into and from the vagina. The organ, with the placenta adherent, was returned to its proper situation, and everything went on favourably. (*Denman's Midwifery*, p. 244, Eng. ed., quoted by *Churchill, on Females*, p. 372.)

CASE 33. *Complete inversion; reposited; recovery*—primipara; labour natural; ten minutes after delivery, violent bearing-down pains came on, which forced the womb, inverted, with placenta adhering externally, from the vagina. The placenta was separated, and the uterus reposited in the usual manner—no hemorrhage; yet great pallor of face, cold sweat, rapid, irregular pulse, great prostration of strength, and threatened convulsions. Under the use of powerful stimulants the patient soon recovered and did well. (*Radford's Essay*, quoted by Churchill, p. 372.)

CASE 34. *Inversion caused by polypus; unreduced; recovery*—patient aged 52; troubled with poor health and leucorrhœa for three years; great debility and emaciation; an attack of vomiting forced the tumour into the vagina, where it remained for three months; appearing externally at the end of that time, it was pushed up and remained in the vagina twelve months longer. On some exertion in walking it came down between the legs, drawing the inverted womb with it. No difficulty at any time in emptying bladder or rectum. A similar case is recorded by Dr. Browne

(*Dublin Med. Journ.*, vol. vi. p. 33); another by Dr. Higgins (*Ed. Month. Journ.*, July, 1849, p. 889); *case by Oldham*, quoted by *Ashwell on Diseases of Women*, p. 403; *case by Rigby*, *loc. cit.*, p. 404; *case by Leblanc*, *loc. cit.*, p. 405; *case by Velpeau*, *loc. cit.*, p. 405.

CASE 35. *Complete inversion; uterus removed by ligature*—primipara; labour natural; funis very short, placenta adherent, and much hemorrhage on its removal; retention of urine requiring use of catheter. Three months after Mr. Newnham, being called in, found constant mucous discharge from vagina, with frequent copious hemorrhages. On examination, the inverted uterus was found in the vagina; ligature applied April 13th, and tightened from time to time; uterus came away May 6th, and the patient did well. (*Newnham's Essay*, p. 31, quoted by *Churchill, on Females*, p. 386.)

CASE 36. *Complete inversion*—midwife in attendance; placenta adherent; caused by pulling on cord. Two hours after delivery, Dr. Radford found patient much exhausted, pallid, cold, &c.; placenta still adherent; no hemorrhage, nor convulsions; uterus reposited without difficulty; did well. (*Radford*, quoted by *Ashwell on Diseases Peculiar to Women*, p. 402.)

CASE 37. *Complete spontaneous inversion; reposited; recovery*—ten minutes after delivery, patient was seized with violent bearing-down pains, and on examination the uterus was found inverted, having, with the attached placenta, passed externally from the vagina; no hemorrhage, but very great exhaustion; placenta was peeled off, and the womb reinverted; patient did well. (*Mr. Mann*, quoted by Ashwell, *loc. cit.*, p. 402.)

CASE 38. *Complete inversion, and supposed spontaneous reinversion*—labour propitious; placenta was said to be naturally detached and expelled; no hemorrhage; attended by midwife. Forty-eight hours afterwards, Dr. Radford found a large tumour passing partly through the os externum. Unsuccessful attempts were made at different times to reduce it; the patient laboured under symptoms of peritonitis; had afterwards sanguineous, purulent and mucous discharges, with great debility, diarrhœa, aphthous affection of the mouth, &c. Uterus gradually lessened to size of a large pear; purulent discharges continued; at end of seven months no tumour could be detected, "the remains of the os uteri could be felt, but no regular aperture, the upper part of the vagina forming a complete cul-de-sac." She lived several years, and died of cholera. (*Radford*, quoted by Ashwell, p. 402.)

CASE 39. *Complete inversion*—placenta adherent; cause not stated; placenta first detached, and then the womb reposited with little difficulty; little hemorrhage; patient recovered without any interruption. (*Radford.*)

CASE 40. *Spontaneous partial inversion*—tedious labour from contracted pelvis; delivered by perforation; "uterus inverted spontaneously, the cord not having been touched; the fundus partially passed through the os uteri, forming a tumour, globular, large, hard, and resistent, with the placenta attached nearly in the centre." The uterus was easily reposited, the placenta then separated; no flooding, faintness, nor convulsion, and the patient had a good recovery. (*Radford*, quoted by Ashwell, *loc. cit.*, p. 403.)

CASE 41. *Spontaneous complete inversion*—attended by midwife; evening after delivery, uterine tumour felt above the pubis; much difficulty in passing urine; catheter used; very low and weak for two or three days. On examination at end of that time, a tumour was found low down in vagina, protruding towards os externum; uterus reduced in about fifteen minutes, after several unsuccessful attempts had been made. (*Radford, loc. cit.*, p. 403.)

CASE 42. *Complete spontaneous inversion; replaced; did well*—at-

tended by midwife; a few minutes after delivery patient complained of a sudden violent pain low down in the belly. The midwife examining, found the inverted uterus and placenta adherent between the thighs. Three-quarters of an hour after, found the patient greatly prostrated, with all the symptoms of fatal collapse. There had been no hemorrhage; stimulants were given, and attempts to restore the uterus made with the placenta adherent, but without success; the placenta was then separated, without hemorrhage; afterwards reduction was effected without difficulty, and the patient had a prosperous recovery. (*Ashwell on Dis. of Women*, p. 410.)

CASE 43. *Complete spontaneous inversion; reposited; recovery*—attended by midwife; very speedy labour, followed by a very hard, protracted, bearing-down pain, which forced the womb, with placenta adhering, external to vagina; no hemorrhage, but all the symptoms of great exhaustion of vital powers; a rapid pulse, cold surface, &c.; attempts to reposit the uterus, with the adhering placenta, being unsuccessful, the placenta was separated, little blood lost, and reduction then effected with a good deal of difficulty. Syncope and laboured breathing continued for some time. In three weeks she resumed her usual avocations. (*Ashwell, loc. cit.*, p. 411.)

CASE 44. *Complete inversion; spontaneous; unreduced; death; fatal from hemorrhage.*—A mother of several children had a rapid labour, of a living child. In a few minutes, without traction on the cord, hard and sudden pain forced the inverted uterus into the vagina; placenta adherent; the surgeon in attendance tried to restore it before removing placenta, but this did not succeed. He now peeled off the after-birth, which was followed by such copious hemorrhage, as to prove immediately fatal. (*Dr. Lever*, quoted by *Ashwell, loc. cit.*, p. 411.)

CASE 45. *Complete inversion; partial recovery*—caused by midwife pulling on cord; patient not much exhausted. Dr. Dewees was sent for soon after the accident; uterus was returned by gently and firmly pressing the fundus uteri upwards, in the direction of the vagina. But the womb was not re-inverted, although two hours were spent in attempting reduction. The patient continued to labour under a bloody discharge, and six months after was still pale and sickly in look. (*Dewees' Midwifery*, p. 478.)

CASE 46. *Partial inversion—cause not stated.* Dr. Dewees failed in attempts to re-invert the uterus, and therefore completed the inversion, which afforded much relief. But the patient died thirty-six hours after. The patient was nearly exhausted by hemorrhage and suffering, and almost pulseless, before the reduction was attempted. (*Dewees' Midwifery*, p. 478.)

CASE 47. *Complete inversion; spontaneous*—twin birth, large pelvis, natural labour, complete in one hour and a half; placenta expelled with very trifling manual assistance; expulsion followed by small quantity of blood; remained comfortably in bed eight days, and was quite well. On the evening of the eighth day, dressed and got up, when she experienced slight uterine hemorrhage. Two days after, while sitting up it returned, and she lost, as was supposed, a quart of blood. A sanguineous serous discharge continued, and she presented the ordinary constitutional symptoms of a large loss of blood; a greenish vaginal discharge succeeded for two or three days, when hemorrhage returned, with symptoms of great exhaustion. Ergot was given, and cold applications made over pubis, but *no vaginal examination.* On the 21st day after delivery, hemorrhage still more alarming recurred, attended with syncope, and on examining, a tumour—the inverted uterus—was found rather larger than a hen's egg, at the upper part of the vagina. Attempts at reduction were made, without success. The

uterine hemorrhage ceased, and she gradually recovered her usual healthy appearance. Fourteen months after, she was pronounced a "very robust, active woman, and had been free from any vaginal discharge for eleven months. (*W. J. Square, in Provincial Med. and Surg. Journ.*, vol. i.)

Remarks.—This case, though called spontaneous, is doubtless to be ranked with those where inversion was begun by traction on the cord; for eight days, during which she remained quietly in bed, she was comparatively comfortable. On getting up, the inversion increased, with hemorrhage, &c., till completed. Mr. S., who was called in on the eleventh day after confinement, made no vaginal examination, though hemorrhage was severe until the 21st day, when the accident was discovered. There can be no reasonable doubt, however, but that partial inversion existed from the time of delivery. The case is also remarkable for the continuous good health the patient enjoyed for more than a year, notwithstanding the inversion.

CASE 48. *Complete inversion*—from midwife pulling on cord, placenta adherent; tumour the size of a child's head, soon became inflamed and gangrenous; ligature was applied in a few days, followed by convulsions and painful draggings in the loins; tumour separated on the 17th day; patient recovered. (*Journ. de Méd.*, Aug. 1786, p. 201.)

CASE 49. *Complete inversion; reposited; recovery*—primipara; labour tedious; delivered by the vectis; considerable hemorrhage; great exhaustion. Three weeks after Dr. Smart, who was called in, found the whole vagina filled with a soft, compressible tumour; no neck or os uteri to be felt; blood was oozing from the surface of the tumour; the attending physician stated it had been much harder, and felt like the head of a child, for which he at first mistook it. Reduced in three days, by gradual pressure, made with an instrument in the form of a common iron mortar pestle, and secured in place by a T bandage. The patient did well. (*B. Smart, in Am. Journ. Med. Sci.*, vol. xvi. p. 86.)

CASE 50. *Complete spontaneous inversion*—very rapid labour; in five minutes after the child was born, the placenta was thrown off, the cord not being touched, except to divide it. On examination, the uterus was found inverted, with the placenta attached. The placenta was removed, and the fundus uteri then passed up into place, without the slightest difficulty; very slight hemorrhage, but great exhaustion, so that for one hour the patient seemed to be dying. The patient, however, soon rallied, and had a favourable recovery. (*D. H. Storer, N. Eng. Quarterly Journ. Med. and Surg.*, July, 1842, also *Am. Journ. Med. Sci.* for July, 1842.)

CASE 51. *Complete inversion; not replaced; death*—midwife in attendance, favourable labour. In detaching and delivering placenta, the uterus was inverted. Dr. Sutton arrived just after the accident occurred, and found the patient ghastly, pupils dilated, pulse very weak, &c., but there had been but little hemorrhage. The patient did not complain much; attempts to re-invert the uterus did not succeed, and she died in about three hours. (*W. L. Sutton, in Am. Journ. Med. Sci.*, vol. iv. N. S.)

CASE 52. *Complete inversion*—primipara; uterus with placenta attached, expelled with the child; no hemorrhage, great sinking, lips and countenance livid, pulse very feeble; separated the placenta and restored the uterus. In this case the membranes gave way several hours before the child was born, presentation natural; body not expelled with severe pains that expelled the head; cord rather short; uterus followed the body with the same pains. Had a slow, but favourable recovery. (*W. L. Sutton, loc. cit.*, p. 84.)

CASE 53. *Complete inversion*—labour easy and rapid; fifth child; pla-

centa adherent; traction on cord brought down placenta, and uterus inverted. The placenta was peeled off, and reduction of uterus attempted, but without success; the uterus was crowded up into the vagina, but next day it came down beyond the os externum. Mental disturbance succeeded, and on the fourth day, the patient became maniacal. Ten days after the accident occurred, the uterus was reposited after an hour's gentle, but forcible compression, the patient having previously been fully brought under the influence of tart. antimony. The recovery was rapid and complete. (*J. P. Gazzam, in Am. Journ. Med. Sci.*, April, 1844, p. 357.)

CASE 54. *Congenital inversion; unreduced.*—This case was reported to the French Academy of Medicine by Dr. Williame, of Metz. The uterus was inverted in the patient, a virgin, so that the body of the uterus was below, and formed a tumour on the right side of the vagina, while its neck was above, and out of the reach of the finger. The patient menstruated regularly, the menstrual blood being always mixed with a copious leucorrhœal discharge. (*Dublin Med. Press*, Nov. 8, 1843.)

CASE 55. *Complete spontaneous inversion*—primipara; labour natural; about seventeen minutes after birth of child, a strong expulsatory effort was made; the uterus felt strongly contracted above pubis. The uterus inverted with placenta adherent, was expelled, and found lying between the thighs of the mother; the portion of the uterine surface, from which the placenta was detached, was pouring out blood in great violence. The patient lay in a state of syncope, pulse imperceptible, clammy perspiration, and vomiting every few minutes. The placenta was separated, and the uterus reposited without difficulty; recovery complete, though slow at first. (*S. Edwards, Lancet*, April 5, 1845, *Am. Journ. Med. Sci.*, July, 1845.)

CASE 56. *Partial inversion of the uterus occurring at the fourth month of utero-gestation.*—Mrs. S. was seized with flooding the 15th of January. On the 16th, abortion occurred, with much hemorrhage, after being pregnant four months. On the 18th, she got up, but the flooding returned with so much violence, that she went to bed, which she was obliged to keep. On the morning of the 25th, during vomiting, she was sensible of something falling down within her, and from that time to the 25th, at half past 10 o'clock P. M. that sensation continued, along with bearing-down pain, flooding, much general uneasiness, and extreme prostration. In the course of twenty minutes, on the 26th, the organ was reposited by the usual mode of procedure; recovery went on slowly. The eighth pregnancy; had been attended by midwives in every labour. (*Dr. Spae, Northern Journ. Med.* July, 1845, *Am. Journ. Med. Sci.*, Oct. 1845, p. 514.)

CASE 57. *Complete spontaneous inversion*—age 35, mother of several children; eighth month of pregnancy; large pelvis; feeble pains at first, "when suddenly a violent throe thrust fœtus, placenta, and body of the uterus inverted, beyond the labia externa;" fœtus small and putrid, umbilical cord but eight inches long. "The uterus was as flaccid as a wet bladder. The fundus was carried up to its place with ease, but no contraction of any part of the organ took place during the operation. *On attempting to withdraw the hand, the fundus followed it.* A strong infusion of ergot was given every ten minutes, while the fundus was grasped with the thumb and finger of the left hand, the right being still in the cavity. In fifteen minutes contractions came on, forcing the head into the vagina. There was no hemorrhage, nor pain, syncope, or any of the usual attendants on this accident. (*E. Fisher, Illinois, Med. and Surg. Journ.*, Dec. 1845.)

CASE 58. *Complete inversion of the womb, with rupture of the posterior walls of the vagina, and passage of the fœtus through the rupture*—age 27, delivered at full period, and spontaneously, but with much straining; after-birth was also discharged with much pain, "after this was delivered, acute pain was felt in the vagina, on applying her hand to the part, a smooth, round body was felt in the vulva. Dr. Snackenbergh being sent for, found the inverted uterus prolapsed through a rent in the posterior walls of the vagina; with his right hand well oiled, he endeavoured first to make the segment of the uterus re-enter through the fissure in the vagina, and afterwards to push it upwards with the hand applied flat on the wound. He supported for some time the perineum, and pressed it upwards with the base of the uterus, which rested on it. Gradually the uterus rose up and assumed its natural position. The lochia came on, and the patient got entirely well. (*Gaz. Méd. de Paris*, Oct. 5, 1834, *Am. Journ. Med. Sci.*, vol. xxvi. N. S., p. 230.)

CASE 59. *Complete inversion and abstraction of the uterus*—Mrs. C. delivered, in natural and easy labour, of a living child, without a physician; cord was tied, but the placenta retained; a physician was sent for, and an ignorant clerk in a drug store went, and finding the placenta adherent, made strong traction on the cord, and inverted the uterus, placenta still adhering; this was separated, and then mistaking the uterus for a part of the placenta, a tumour, or something else, proceeded to drag it from its attachments, and separate it from the body, during which operation she died. Three-quarters of an hour were spent in accomplishing the task. (*J. H. Griscom, in N. Y. Journ. Med. and Surg.*, 1839.)

CASE 60. *Partial inversion*—age 34, mother of four children, natural labour; placenta adherent; as the after-birth did not immediately come away, the midwife in attendance pulled strongly on the cord, while another woman made pressure with her hands over the fundus uteri, the patient being at the same time urged to bear down; the placenta, with the inverted uterus, was drawn down to the os externum, accompanied with severe hemorrhage, the uterine tumour being nearly of the size of the fœtal head, the patient expiring in a few minutes. Autopsy showed that the uterus had not contracted. (*John Christie in Ed. Month. Journ. Med. Sci.*, 1846.)

CASE 61. *Inversion produced by a polypus*—age 46, mother of five children, laboured under severe leucorrhœa; examination disclosed a polypoid tumour, projecting from os externum; this was excised, two years after the first appearance of the disease. One year after, a pyriform tumour was discovered in the vagina, with its base inferior, of a firm, resisting texture, and quite insensible to the touch. The uterus was drawn down by a uvula forceps, and the diagnosis made clear. The organ was left to itself; result not stated. (*M. Fleury, in La Presse Médicale*, No. lviii. 1837, and *Bell's Eclect. Journ. Med.*, vol. ii. p. 431.)

CASE 62. *Inverted uterus removed by ligature; death*—Mrs. S., aged 46, delivered at full time of a healthy child, labour lingering, placenta adherent, and removed by midwife by violent traction on cord. Hemorrhage succeeded, which was protracted for the space of nine months; patient pale, anæmic, weak, with a copious and very mucous discharge, during the intervals of the floodings. At the end of nine months, a tumour was found in the vagina two and a half inches in length, and an inch and a quarter broad, tapering upwards—firm and incompressible in texture, smooth and regular on its surface, devoid of sensibility when pressed or irritated, the os uteri embracing its upper part. The uterus was ligated and tightened every other

day; on the fifteenth day, the uterus came away; peritoneal inflammation succeeded, and the patient died on the sixth day after the operation. (*Symonds, Med.-Chir. Review*, vol. xiv. p. 251.)

CASE 63. *Partial inversion*—delivery by forceps; placenta adherent; traction drew it down, together with the *fundus uteri* into the vagina, followed by flooding; the uterus, with placenta adhering, was immediately returned; the adherent portion separated, and the patient did well. (*Rev. of Ingleby on Obst. Med. in Med.-Chir. Rev.*, vol. xxvi. p. 99.)

CASE 64. *Complete inversion from pulling on cord; reposited; recovery*—attended by midwife; placenta adherent. The whole uterus hung between the thighs; the fundus ulcerated, and discharging offensive matter, resembled, some years after the accident, a malignant tumour, the size of a cocoa-nut. The uterus was re-inverted by gradual and gentle pressure, and its prolapse afterwards prevented by a pessary, "which was secured round the hips by means of tapes." The health of the patient was afterwards comfortable; could walk any distance without inconvenience. (*Med.-Chir. Rev.*, vol. xxvi. p. 100.)

CASE 65. *Complete inversion, unsuspected during life.*—J. Lisfranc relates the case of an old woman, who died of bronchitis in the Salpêtrière, and, upon *post-mortem* examination, the uterus was found completely inverted. Convalescent from a former attack, she had been under observation a considerable time prior to the fatal seizure of bronchitis, and was observed to be very active in her habits, regular in most of her functions, and manifesting no one symptom whatever of uterine derangement; appetite and digestion good; no pain in pelvis, and no vaginal discharge. Lisfranc does not believe in the authenticity of those cases, in which the uterus is said to have been reduced spontaneously, at the expiration of days, weeks, or months after the inversion has occurred. (*Clinique Chir. de l'Hôpital de la Pitie*, 1843.)

CASE 66. *Partial inversion*—age 31, primipara; tedious labour, requiring the use of instruments; placenta adherent, and removed with difficulty, with probable traction on cord. Whenever she assumed the upright position, she had a very unpleasant, dragging sensation in the uterine region. Three weeks after labour, she had an attack of hemorrhage from the vagina; soon after, a tumour appeared below the vulva, which proved to be the uterus, partially inverted and prolapsed. The uterus was replaced in the vagina, and Sir Philip Crampton attempted to re-invert it, but without success; great pain, irritability of stomach, and syncope succeeded, and one week after, hemorrhage, and she finally sank from exhaustion, nine months after confinement, the prominent symptoms being hemorrhages, irritability of stomach, and mucous discharges.

Dr. McClintock, who reports this and the last case, in the *Dublin Journ. Med. Sci.*, 1845, remarks as follows: "In both of these cases, it will be perceived that there was some manual interference by the attendant in removing the placenta, by which, doubtless, the inversion was produced. Indeed, I cannot help expressing my conviction, that whenever the uterus is inverted at the time of parturition, it is to be attributed to some mismanagement of the delivery of the after-birth, in confirmation of which I would adduce the accumulated experience of Drs. Clarke, Labatt, Collins, Kennedy, and Johnson, in this hospital, which does not furnish a single instance of the occurrence of this accident, though the number of women delivered during their united masterships amounts to upwards of 71,000." (*Braithwaite*, 1845, vol. xi. p. 275.)

CASE 67. *Inverted uterus extirpated by ligature*—Mrs. A., natural labour, placenta adherent; midwife inverted the uterus, by pulling on the cord, to extract it; tumour lodged in the vagina; no hemorrhage after a few days, for several months, nor menstruation. Dr. Gooch, who then for the first time examined it, found the tumour, the size of a small apple, smooth surface, narrow stalk, encircled by the orifice of the uterus, like a polypus, but sensible to the touch; her health seemed to be sustaining no injury from it. Two years after, she was seen again, when it appeared that she had become subject to frequent and profuse hemorrhages, which had broken down her health; attempts at reduction having failed, the uterus was ligated, and the ligature tightened every other day. On the fourteenth day, it came away, proving to be the fundus of the uterus, for it was a hollow cup, the size of a small apple. The patient entirely recovered. (*Gooch, Med.-Chir. Rev.*, vol. ix. p. 252.)

CASE 68. *Partial spontaneous inversion*—age 25, primipara. Ergot was given during labour, and the funis presenting in advance of the head; the forceps were applied; child stillborn; no traction on cord, the placenta being naturally expelled in a few minutes; uterus contracted well; funis of natural length; an hour after, some hemorrhage took place, but the uterus had contracted, so stated, and she went on satisfactorily for three days; at the end of that time, a cathartic was given, attended with much pain and straining, during which the patient felt as if something had come down. Vaginal examination now showed that inversion had taken place, the fundus having descended to within an inch or two of the labia, but no hemorrhage had taken place since the day of delivery. Attempts to reduce it proved unsuccessful; rest and astringent injections used; sanguineous and serous discharges, however, soon came on, which caused great exhaustion. Nine months after delivery, another attempt at reduction caused so much pain, that it had to be discontinued. Severe hemorrhage continued, especially at the catamenial periods, which was attended with constipation, headaches, palpitations, frequent pulse, slow hectic fever, irritable stomach, &c. She survived a year and a half, and died from exhaustion. *Post-mortem* examination showed the uterus to be in a state of partial inversion; length of tumour three-quarters of an inch, transverse diameter one inch and a half, greatest circumference four inches and a quarter. (*J. G. Forbes, Med.-Chir. Trans.*, vol. xxxv. p. 127.)

CASE 69. *Inversion successfully reduced on the sixteenth day after the accident*—age 24, second accouchement; cause not apparent. On sixteenth day, Dr. M. found patient in bed, in a comfortable condition, free from pain, or other special inconvenience; uterus completely inverted, and occupying the entire vagina; reduced by placing patient on her back, under influence of equal parts of ether and chloroform. The body of uterus was grasped with the right hand, and pressed steadily upwards, in a line corresponding with the axis of the pelvis, while counter-pressure was made with the left, over the abdomen. The reduction was speedily effected, with but little pain to the patient, and the loss of but little blood. The patient felt comfortable, and did well. (*Mendenhall, Am. Journ. Med. Sci.*, Oct. 1859.)

CASE 70. *Inverted uterus replaced after a lapse of nearly twelve months*—age 25, second labour; rapid delivery; living child; placenta retained three and a half hours, during which there was great hemorrhage; patient became insensible, and hence unable to say whether placenta came away spontaneously, or was removed by hand; great weakness, diarrhœa, and pain in abdomen followed, which confined her to bed;

at the end of five weeks phlegmasia dolens set in, which was treated by leeches, &c. Three months after confinement, menstruation reappeared, discharge profuse, and mixed with coagula; flow lasted longer than natural, and returned more frequently, followed by yellowish, leucorrhœal discharge; reduced very low by oft-returning hemorrhages; skin sallow, pulse very feeble and frequent, &c. Examination disclosed partial inversion, a tumour of oval form, hanging down about two inches and a half through the os uteri, which closely surrounded, but did not constrict it. The uterus was reduced in the course of three days, by the use of an air-pessary, made of vulcanized India rubber, four inches long, by five in circumference at its middle, rendered comparatively inelastic at its lower half, by the introduction of several layers of linen between the folds of the India rubber; a belt fastened around the waist, the anterior half of steel, served as a fixed point for a metallic wire, attached to a small wooden dish or cup, bearing the pessary. The air was forced into the pessary by a syringe through an elastic tube connected with it. By this means continued pressure was exercised against the fundus of the inverted uterus, without painful distension of the vagina, until it was gradually reduced. (*Charles West, Med. Times and Gaz.*, Oct. 29, 1859; *Am. Journ. Med. Sci.*, Jan. 1860.)

CASE 71. *Inverted uterus removed by ligature*—age 22, second child; placenta adherent, extracted with great pain and excessive hemorrhage; flowed more or less all the time for three months; at this time ceased nursing child, hemorrhage became incessant; one year after confinement appeared bloodless, anasarcous, and very weak; attempts to reduce the uterus failed, though ether was given; tumour ligated by a cord, so as to be daily tightened by a screw, came away on the eleventh day, recovery perfect. (*C. G. Putnam, Am. Journ. Med. Sci.*, Oct. 1856.)

CASE 72. *Inverted uterus removed by ligature*—age 25; first confinement, had twins, and was much enfeebled by nursing; at second confinement she was not aware of any extraordinary pain, hemorrhage, or faintness, though she never "felt quite right" about the pelvis. During first week sat up in bed, and moved about the bed more freely than usual. On eighth day, having got out of bed to evacuate the bowels, she felt something protruding from the external organs, considerably larger than an orange. She suffered much distress till it was replaced in the vagina. It appeared no more externally, though she was occasionally obliged to press it upward, in order to relieve a painful sense of pressure. Local uneasiness gradually diminished; able to attend to her household duties for eight months, though flowing almost constantly, when she had to remain in bed. Palpitation, throbbing in head, dyspnœa on motion, urgent thirst, pale, very feeble pulse, white tongue, &c.; tumour two inches in length, two inches in breadth, and an inch and a half thick, high up in vagina. Ligature applied, and tightened as she could bear it. On the ninth day after, died from exhaustion, without peritoneal inflammation tumour detached, and cicatrization effected. (*C. G. Putnam, loc. cit.*, p. 572.)

CASE 73. *Inverted uterus successfully removed by ligature*—age 23; second confinement; unusual pain and hemorrhage during the delivery of the placenta; flowed for a year, almost continually. Exhaustion extreme, attempt to re-invert uterus failed. Ligature applied to tumour, which came away at the end of two weeks; recovered from the symptoms which attended. In the above three cases the writer thinks it probable that inversion took place at the time of delivery. (*C. G. Putnam, loc. cit.*, p. 573.)

CASE 74. *Complete inversion*—age 24; second confinement; breech presentation; child small, labour easy, placenta adherent; traction on the cord, and pressure over the pubis, brought the inverted uterus into the vagina; attempts to reduce the womb, with placenta adherent, failed at first, but in the course of an hour succeeded; but the patient died in twenty minutes from hemorrhage, placenta still adherent. (*Burrowes, Trans. Prov. Med. and Surg. Assoc.*, Aug. 5, 1846; *Am. Journ. Med. Sci.*, Jan. 1846, p. 217.)

CASE 75. *Complete inversion*—labour not exhausting; placenta adherent; strong pressure made over pubis; tight binder as soon as child was born; uterus was readily replaced, with placenta still adherent, which came away on withdrawing the hand. Patient recovered as well as she usually had done, and no unpleasant symptoms followed. (*Burrows, loc. cit.*)

CASE 76. *Complete inversion*—second child; labour eight hours' duration; child born naturally, placenta expelled in half an hour after; immediately the patient complained of great pain in back and groins, sense of fulness in vagina, followed by copious hemorrhage and fainting fits, rapidly succeeding each other; rapid respiration, gasping, deep sighs; small, thready pulse, 125 in a minute; palpitation, great prostration and collapse; no tumour felt over pubis; uterus easily reposited in usual manner; patient slowly but perfectly recovered; no undue force, it is stated, was applied to the cord, but there is every reason to believe that this was the exciting cause. The writer states that this was the first case in 3500 delivered in the hospital. (*T. R. Mitchell, Dub. Med. Press*, Sept. 9, 1846; *Am. Journ. Med. Sci.*, Jan. 1847.)

CASE 77. *Inverted uterus successfully extirpated by excision; recovery*—coloured woman; had laboured under inversion for twenty years; how it happened was unknown; she had always been greatly annoyed by it, but by means of a T bandage had been able to pursue her ordinary avocations. Latterly it had increased in size so much as to render this impracticable; any attempt at replacement caused excruciating pain. The tumour was of the size of a fœtal head at full term, pyriform in shape, and hung between the thighs; whole surface covered with a rough, thickened mucous membrane, abraded and ulcerated in many points, a good deal inflamed and disposed to bleed on handling. A strong ligature was applied to its neck, when it was cut through below the ligature by a probe-pointed bistoury with very little pain. The patient rapidly recovered and did well. (*E. Geddings, Am. Journ. Med. Sci.*, Oct. 1854.)

CASE 78. *Complete inversion, restored; recovery*—age 19, primipara; labour easy, six hours' duration. The accoucheur had kept his hand over the uterus above pubis to promote contraction, for fifteen minutes after the child was born, when, finding some flooding, he increased his pressure, when the uterus was felt suddenly to yield and recede from the grasp, and was expelled from the vagina with the placenta adherent. The woman became pallid, anxious, complained of considerable pain, and a sensation of sinking; pulse almost imperceptible; no hemorrhage. The placenta was detached and the uterus reposited in seven minutes, in the usual manner, making counter-pressure over the pubis. Patient made a perfect recovery, and did well. (*G. Johnston, Dublin Quart. Journ. Med. Sci.*, Feb. 1854; *Am. Journ. Med. Sci.*, Oct. 1854.)

CASE 79. *Complete inversion*—delivery at full term, after an ordinary labour; placenta came away without any difficulty or pulling at the cord. Forty-eight hours after this she rose from her bed to evacuate her bladder, when complete inversion took place. Thirty-one hours after, was found

pale, pulse small, rapid, look anxious, &c. The uterus had been pushed up into the pelvis and left. A cup-like depression could be felt above the pubis; under the influence of chloroform the womb was reposited after long and persevering efforts. (*E. P. Bennett, Am. Journ. Med. Sci.*, Apr. 1857.)

CASE 80. *Complete inversion of twelve years' duration, reduced; recovery*—primipara; delivered at the age of 18; inversion occurred, but was not suspected. When at length an examination was made, a tumour was found in the vagina. Flooding continued to a greater or less extent for nearly twelve years, never a single day free from a sanguineous discharge; all attempts to reduce the uterus failed. Dr. Tyler Smith, on taking charge of the patient, found anæmia existing in the highest degree. She was subject to epileptiform convulsions and frequent faintings, passed little urine; often twenty-four hours without micturition. Dr. S. determined to attempt its reduction by continuous pressure, with the intention of dilating or developing the os and cervix uteri. With this object the hand was passed into the vagina night and morning, and the uterus squeezed and moulded for about ten minutes at a time. Chloroform was not used. In the intervals the vagina was distended, and firm pressure excited upwards by a large air-pessary. These means gradually dilated the os uteri to such an extent as to allow of the partial return of the uterus, and on the eighth day from the commencement, complete reinversion took place. Recovery was rapid and perfect. (*Tyler Smith, Am. Journ. Med. Sci.*, July, 1858, p. 270.)

CASE 81. *Complete inversion*—Mrs. H., age 25; primipara; funis twisted twice around child's neck; natural labour, sixteen hours' duration; very strong, forcing pains; half an hour after child was born, a strong pain forced the inverted uterus and adhering placenta without the vagina; patient became pulseless, cold, prostrated, and in a state of collapse; breathing laborious. The uterus had been exposed three-quarters of an hour, and was much contracted. The placenta was peeled off, no hemorrhage, and uterus reposited with little difficulty, and in the usual manner. The hand was retained within the uterus till it contracted and then withdrawn; some peritonitis followed, which was successfully treated by leeches, fomentations, &c., and the patient was soon restored to her usual health. (*Borham, Am. Journ. Med. Sci.*, April, 1856, p. 533.)

CASE 82. *Complete inversion of the uterus*—age 34; second confinement; labour natural, lasted six hours; child large and living; no hemorrhage; funis very short and twisted twice round the neck; it was divided, as it was too tight to relieve it, or apply ligatures; in twenty minutes a strong expulsive effort brought down the inverted uterus with the placenta adhering; considerable hemorrhage followed; patient became weak, faint and exhausted; placenta was detached and the uterus reinverted without difficulty. Patient had a good recovery. (*Leonard, Ibid.*, p. 534.)

CASE 83. *Partial inversion from traction on the cord*—seventh confinement; labour natural; midwife pulled strongly on the cord, when sudden symptoms of collapse occurred; violent hemorrhage, pallor, delirium, syncope, &c.; portion of placenta unremoved. The uterus was replaced with the placenta adhering; all the symptoms disappeared, and the patient had a favourable recovery. (*Ellis, Med. Times*, Feb. 16, 1856.)

CASE 84. *Inversion following abortion at the fifth month of pregnancy*—age 23, second confinement; strong labour pains; child stillborn; cord of unusual length, and not wound round the neck; very severe hemorrhage came on immediately, pulse became imperceptible, face death-like, features

pinched, breathing laborious, body cold and bathed in perspiration; uterus was found between the thighs, inverted, flaccid, with placenta adhering to the fundus; the uterus was reposited with placenta adhering; about one-half was detached and removed, the hand remaining *in utero* till contraction took place; the uterus firmly contracted on the remaining portion of the placenta, and prevented its removal; about twenty-four hours after it was removed in a putrid state, with slight hemorrhage. Patient had a slow but perfect recovery. (*John A. Brady, N. York Med. Times*, Feb. 1856.)

CASE 85. *Inversion successfully reduced at the end of six months*—primipara, age 19; a German midwife in attendance; child weighed 10½ lbs.; the after-birth, she stated, soon came away, accompanied by a large tumour, which she supposed to be a mole or false conception. Great hemorrhage followed, producing protracted syncope. Five days afterwards, whilst making an effort to evacuate the bowels, the tumour descended through the os externum, and became suspended between the patient's thighs. One week after the inversion occurred, Dr. White found the uterus inverted, and as large as at the fourth month of pregnancy; inflamed and tender, as also the external organs. By powerful compression of the womb, it was finally relieved in a measure of its engorgement, and successfully reposited, but with considerable loss of blood. Patient died on the third day after from exhaustion. (*J. P. White, Am. Journ. Med. Sci.*, July, 1853.)

CASE 86. *Complete inversion; restored after six months' duration*—age 30, second confinement; natural labour; large male living child; placenta adherent, but removed at end of half an hour, followed by copious flooding, severe pain, and faintings; great prostration; continued very weak for three weeks, when she took an aloetic cathartic, which occasioned violent efforts at stool, with pains resembling those of labour, followed by profuse hemorrhage, and a large pear-shaped tumour made its appearance through the os externum; the neck being at the vulva and the larger extremity between her thighs. The tumour was carried high up in the vagina; for three months occasional severe hemorrhages, and constant discharge of muco-sanguinolent matter. Patient mostly confined to bed, with pulse 130, and all the symptoms of great exhaustion; uterus about the normal size, six months after delivery. The uterus was reinverted, the patient under the influence of chloroform, with the aid of a large rectum bougie pressed against the fundus, continuous, gentle pressure being made upon the external extremity of the bougie with the left hand, while the right compressed the uterine tumour, and kept the upper extremity of the instrument directly upon the fundus, and with the dorsum of the hand in the concavity of the sacrum, directed the force in the axis of the pelvic cavity, putting the vagina completely upon the stretch. Patient suffered but little during the operation, little flooding, and quite comfortable afterwards. Recovered perfectly. (*J. P. White, Am. Journ. Med. Sci.*, July, 1858.)

CASE 87. *Inverted uterus*—primipara, age 29; child stillborn, and delivered by forceps after ergot had been given. In half an hour uterus contracted, and the placenta adherent with inverted uterus, was forced into the vagina, followed by hemorrhage, fainting, &c. It was at once replaced, and the patient recovered. (*J. G. Crosse, Prov. Med. Journ.*, June 12, 1844.)

CASE 88. *Complete inversion removed by ligature; recovered*—same patient as above, aged 31, second labour, natural, eight hours' duration, female child, living, followed by severe hemorrhage, placenta partially adhering; hand was introduced into uterus, and the placenta removed

piecemeal; much flooding. Twelve hours after, the patient was faint, pallid, cold, nearly pulseless; on examination, the uterus was found in the vagina, inverted, of the size of the fist; attempts at reinversion failed, owing to the firm contraction of the uterine tumour, and the very feeble state of the patient. Four days after, the inversion from partial, became complete, on the patient raising herself incautiously, and straining at stool, while the inverted uterus was forced beyond the os externum and external labia. The tumour measured twelve inches in circumference, and protruded five and a half inches at external labia. The tumour was covered with soft linen, and encircled with a bandage; urine drawn off twice daily. Surface of tumour of a florid red colour, tender, vascular, and in some places ulcerated. Fifteen days after delivery, the length of the inverted organ was three and a half inches, greatest circumference, eight and a half inches. One month after delivery, a silk ligature was applied to the neck of the uterus, and tightened every few hours. The ligature was removed at the end of twelve days; the tumour came away, and the patient had a perfect recovery. (*J. G. Crosse, loc. cit.*)

CASE 89. *Inverted uterus mistaken for polypus, and removed by ligature; recovery*—age 32, married fourteen years, second confinement, attended by midwife, labour painful and protracted, profuse flooding, placenta adhering, followed by profuse sanguineous and mucous discharges, dragging in direction of round ligaments, pains and weakness in back, &c. Some months after, she was found labouring under hectic fever, profuse nightsweats, hacking cough, great prostration, &c. A tumour, the size of a large pear, occupied the vagina, the vagina irritable, and ulcerated; a ligature was applied, supposing it to be a polypus, and tightened every day. On the eighteenth day, it came away, with the uterine tumour; recovery slow, but perfect. (*J. M. Esselman, Am. Journ. Med. Sci.*)

CASE 90. *Uterus extirpated for inversion; recovery*—a large polypus attached to the fundus uteri, inverted the organ by its weight; when discovered, it was the size of a man's fist. Hectic fever, great prostration, &c., present. The tumour was seized with the double forceps of Museaux; the whole mass was thus drawn beyond the external organs of generation, and being held fixed in this position, was extirpated by means of a strong pair of curved scissors. The woman did well. (*M. Luytgaerens, Ed. Med. and Surg. Journ.*, July, 1840, p. 281.)

CASE 91. *Complete inversion successfully treated by ligature*—H. B., age 39, eighteen months' standing; much pain followed the application of the ligature. Threatening of peritoneal inflammation, requiring the use of leeches, and considerable constitutional disturbance. The tumour separated, with the exception of its peritoneal lining, on the twelfth day; this was divided with scissors, it contained part of the Fallopian tubes and round ligaments; recovered. (*Windsor, Med.-Chir. Trans.*, vol. x. p. 364.)

CASE 92. *Inversion successfully treated by ligature*—Mrs. G., æt. 26, three months' standing. Ligature applied April 13, 1837; much pain produced. It was observed on the 14th and 15th; on the 17th, the canula was removed, and the ligature left loosely on. On the 18th, it was again tightened, and this was done daily till the 6th of May, when the tumour came away; recovered. (*Newnham, on Inversio Uteri*, p. 31.)

CASE 93. *Inversion treated by ligature*—more than two years' standing. Ligature came away on the tenth day; patient suffered from emaciation, cough, ecthyma of the legs, pain, and profuse vaginal discharges. She recovered from the operation, but died of phthisis nine months afterwards.

Ligature made of fine, well-annealed silver wire and silk, twisted. (*Johnson, Med.-Chir. Trans.*, vol. xxxv. p. 141.)

CASE 94. *Inverted uterus successfully removed by ligature*—an elderly woman, many years' standing; continued and profuse hemorrhages. The tumour came away, after a considerable time, much softened and decomposed. Ligature same as in the preceding case; recovered. (*Johnson, loc. cit.*, p. 141.)

CASE 95.—*Inversion successfully treated by ligature*—Mrs. M., age 20, upwards of fourteen months' standing; supposed at first to be a polypus, and tied as such. So much pain was produced on tightening the ligature, that the error was discovered; it was not, however, loosened, and the tumour came away in three weeks. Violent pains, nausea, vomiting, and threatening of peritonitis were produced; catamenia returned. Ligature the same as in the preceding case; recovered. (*Johnson, loc. cit.*, p. 142.)

CASE 96. *Inversion treated by ligature*—age 27, six years' standing. Application of ligature followed by pain and retention of urine. It was removed on the second day; reapplied after an interval of three weeks, and the tumour which consisted of the fundus of the uterus, and part of the Fallopian tubes came away on the nineteenth day. Ligature same as in the preceding case; recovered. (*Johnson, loc. cit.*, p. 142.)

CASE 97. *Inverted uterus successfully treated by ligature*—age 60; complained of a tumour which hung down from the external parts, between the thighs, attended by a discharge of mucus and pus, so profuse as to make her extremely weak. On examination, Mr. Clark found it to be the inverted uterus, the whole surface in a state of ulceration. The vagina was also partly inverted, the surface being partially in a state of ulceration. A ligature was applied round the upper part of the uterus, and tightened daily till the eleventh day, when it sloughed off. Very little pain was suffered, and the woman recovered. (*Denman's Mid.*, p. 593, Am. ed.)

CASE 98. *Inverted uterus removed by ligature; recovery*—age 24; uterus inverted by midwife making forcible traction on funis to extract placenta. Ten hours after, while sitting up in bed, the womb prolapsed, but was immediately returned, and this occurred for several weeks. Five years after she complained of constant aching in the back, headache, and nausea, with palpitation on slight exertion. The tumour was only felt in the vagina, when the patient strained. A ligature was passed round the neck of the tumour with Gooch's canula, but had to be loosened a few hours after from the severity of the symptoms. On the eighteenth day the neck of the tumour was half cut through, and on the twenty-eighth the remaining portion was divided with the bistoury. The discharge was acrid, highly offensive, and irritating. The tumour equalled in size the head of a five months' fœtus. Six weeks after the patient was in excellent health, slight weakness of the back alone remaining. (*A. H. McClintock, Dublin Journ. of Med. Sci.*, March, 1835, p. 42.)

CASE 99. *Partial inversion; uterus removed by ligature*—Mrs. D., age 37; miscarried, followed by hemorrhage, which, on the second day after, greatly increased, and a tumour, size of a man's fist, appeared at vulva. Fourteen days after delivery, a tumour "large as a child's head," came down externally. The next day it was discovered to be the inverted uterus. A ligature of shoemaker's twine was placed around the neck, and tightened daily, giving rise to great pain, numbness of right thigh, and distress in urination. Five days after the tumour, partly destroyed by sloughing, was cut away; patient recovered. (*Weber, Siebold's Journ.*, 1826, p. 406.)

CASE 100. *Complete inversion treated by ligature*—age 19; midwife dragged on the funis and inverted the uterus; placenta adherent; tumour, size of a child's head, soon became inflamed and gangrenous. Ligature was applied in a few days, followed by convulsions and painful draggings in the loins, followed by diarrhœa, general œdema, &c. Tumour separated on the seventeenth day; patient recovered. (*Faivre, Journ. de Méd.*, Aug. 1796, p. 201.)

CASE 101. *Inversion; uterus removed by ligature*—two years' standing. Pain following the application of the ligature was easily borne, and the nervous symptoms slight. The tumour came away on the nineteenth day. All hemorrhage ceased, and though the catamenia never returned, her health was not affected. Patient was alive forty-two years after the operation. (*Martin, Med.-Chir. Trans.*, vol. xxxv. p. 142.)

CASE 102. *Inversion treated by ligature*—six months' standing; first taken for a polypus. Ligature applied in July, 1835. The pain was so excessive that it was removed in an hour. The case was then recognized as one of inversion. A ligature of catgut was applied on the 4th of August, and not drawn very tightly. Severe pain followed, and recurred whenever it was tightened, which was relieved by opiates. Tumour came away on the 21st August, the seventeenth day. Catamenia replaced by sanguineous discharge, occurring monthly. (*Med.-Chir. Trans.*, vol. xxxv. p. 143.)

CASE 103. *Inversion treated by ligature*—æt. 54; ligature applied April 12th, 1804, and tightened on the 14th, 20th, 23d, and 26th. Tumour cut off on the 2d May, being quite dead; patient recovered. (*Loc. cit.*, p. 143.)

CASE 104. *Inversion treated by ligature*—three years' standing; ligature applied with success; patient recovered. (*Bouchet (Père), Lisfranc, Clin. Chir.*, vol. iii. p. 400.)

CASE 105. *Inverted uterus; ligature*—sixteen months' standing. Ligature applied with Hunter's needle. Uterus came away softened on the eleventh day; no bad symptoms; recovered. (*Blundell, Obst. Med.*, p. 808.)

CASE 106. *Inversion*—ligature was applied, but the patient being of an irritable constitution, it required to be frequently loosened. Tumour ultimately came away, and the patient recovered. (*Blundell, loc. cit.*, p. 808.)

CASE 107. *Inversion treated by ligature*—upwards of two years' standing. Ligature applied, and tightened every other day; so much pain each day as to require an opiate. Tumour came away on the fourteenth day. Pain and vomiting occurred throughout the treatment. Enjoyed good health for more than twenty years. (*Gooch, Dis. of Women*, p. 263.)

CASE 108. *Inversion; ligature*—age 31; one month's standing. Patient had been the subject of inversion in her first labour, two years before, after the use of ergot and the forceps. Now the inversion was complete, and the tumour protruded externally. Ligature applied February 12th, on the neck of the uterus; pain in the lower part of the abdomen and in the loins followed, which was relieved by opiates. The ligature was gradually tightened, and on the 18th February the tumour was flaccid, dark, and putrefying, and it was cut off below the ligature. On the 20th, the ligature was removed. Catamenia suppressed entirely; recovered. (*Crosse, Prov. Med. & Surg. Journ.*, vol. viii. p. 155.)

CASE 109. *Inversion cured by ligature*—two years' standing. Profuse hemorrhage at the monthly periods. The tumour was drawn down with a volsellum, and strong silk ligature applied with great firmness, with the half of a double canula, and an eyed steel staff. Tumour came away in nine days. Reaction from the time of operation very moderate. An occasional anodyne required, and the catheter was twice used. The entire body and

neck of the uterus were removed. Patient up in twenty days, and recovered. (*Greyson, Med. Gazette*, vol. xxxvii. p. 342.)

CASE 110. *Inversion; ligature*—Mrs. M., age 27. Confined in April of second child; placenta was delivered in pieces, but afterwards the parts were apparently *in situ*. Without any evidence of inversion, the patient had floodings to a greater or less extent till the end of August, when the doctor was called on account of a tumour in the vagina, which was represented to be of recent origin. He found an ovoid tumour low down in the vagina, griped firmly at its base by the os uteri; it was not particularly sensible to the touch. The patient feeble and anæmic. A ligature of whipcord was placed firmly round the base of the tumour, close to the os uteri, with the double canula. The tightening of the ligature caused some pain, which was followed by a fit of hysteria, and syncope of considerable duration. A similar paroxysm followed every tightening of the cord. Canula with the ligature and tumour came away on the twenty-first day after its application. The patient recovered, and had a slight sanguineous discharge very regularly at monthly periods from the vagina, which was always preceded by slight headache. The size of the uterine tumour removed, was that of a small orange, but more oval. (*H. Davies, Med.-Chir. Trans.*, vol. xxxv. p. 145.)

CASE 111. *Inversion; ten months' and a half standing*—ligature applied June 5th, 1840. Rigors occurred three or four hours after the operation, followed by symptoms of violent peritoneal inflammation. Distress was so great, and danger so urgent, that the ligature was removed twenty-four hours after its application. Nothing solid passed from the vagina. Health was restored, and catamenia appeared July 13th, without pain or expulsion of coagula, and did so regularly afterwards without hemorrhage. (*Ramsbotham, Principles and Pract. of Obst. Med. and Surg.*, p. 541.)

CASE 112. *Inversion*—Dubois relates a case where the uterus was ligated for excessive hemorrhage, and the severity of the symptoms necessitated the removal of the ligature before extirpation was effected. (*Boivin & Duges*, vol. i. p. 242.)

CASE 113. *Inverted uterus*—age 36; three months' standing; mistaken for polypus; ligature was applied, and the patient cried out with pain. It was removed the following day, but she nevertheless sank and died on the fifth day. (*Velpeau, Clin. Chir.*, vol. ii. p. 423.)

CASE 114. *Inverted uterus*—age 24; mistaken for polypus; placenta adherent to the tumour, which hung between the thighs. The young surgeon who mistook the nature of the case, removed the placenta and ligatured the tumour on the day of delivery, July 6th, 1824. This arrested the hemorrhage, and he then returned the mass into the vagina. The tumour came away on the 1st of August. Death on the 12th, from peritonitis. (*Boivin & Duges*, vol. i. p. 242.)

CASE 115. *Inverted uterus mistaken for polypus*—age 37; disease of twelve months' standing. The vagina occupied by a pediculated tumour the size of a large egg, the pedicle that of the forefinger. The disease pronounced to be polypus by three of the first accoucheurs in London, two of them present at the operation. The operator, less certain of its nature, proceeded to the removal of the tumour with caution; having drawn this out of the vagina, the pedicle was exposed, and incised layer by layer; immediately on its being ascertained that the case was one of inversion, the knife was laid aside, and a ligature applied tightly above the incision.

Peritonitis; death in four days. (*Arnott, Med.-Chir. Trans.*, vol. xxxv. p. 148.)

CASE 116. *Inversion treated by excision*—age 24; three years' standing. The tumour was removed with a knife. The finger entered the peritoneal cavity, and felt intestines distinctly. The operation was followed by acute pains, cramps, extreme restlessness, and faintings, which continued with great intensity for three days. Little hemorrhage. In less than a month the patient was well. The whole body of the uterus was removed; a portion of the neck only being left. (*Velpeau, Clin. Chir.*, vol. ii. p. 441.)

CASE 117. *Inversion treated by excision*—age 35; fifteen years' standing. Two strong threads first passed through the root of the tumour for the purpose of restraining hemorrhage, but they were not tied. The uterus was then drawn down, and the fundus and part of its body removed, and the vagina was plugged. Patient died of peritonitis in two days. (*Velpeau, Gaz. des Hôpitaux*, vol. vi. p. 413.)

CASE 118. *Inverted uterus treated by ligature and excision*—age 23; eighteen months' standing. The ligature was applied, which was followed by repeated and severe pains, each time relieved by laudanum. When tightened, the pain was again so violent that it was necessary to loosen it. This occurred several times; at length a fresh ligature was applied around that portion of the tumour not destroyed, and it was removed by the knife. Peritonitis was threatened, and there was swelling of the left leg and thigh. Patient was well in thirty days. Catamenia did not return. (*Laperre, Velpeau, Clin. Chir.*, vol. ii. p. 443.)

CASE 119. *Inversion treated by ligature and excision*—eleven months' standing; mistaken for a polypus. A ligature was applied, which was followed by great pain, severe vomiting, and watchfulness. Not having produced the desired effect, it was removed at the end of a fortnight. The hemorrhage, however, ceased, and the health greatly improved. One day, on some effort being made, a large tumour shot suddenly out of the vagina. A ligature was then placed above the indentation produced by the old one, and the tumour was excised below it. Patient was quite well in six weeks; no return of catamenia. (*Clarke, Edin. Med. & Surg. Journ.*, vol. ii. p. 419.)

CASE 120. *Complete inversion treated by ligature and excision*—M. G., age 37, five weeks' standing; uterus inverted and protruding externally. An armed seton needle was passed through the vagina, and each half of it was included in a ligature. Another ligature was then placed around the whole vagina above this. The vagina was thus divided, by which one inch and a half of its length, and the whole of the uterus, were removed. The lower ligature came away in nine days; the upper one remained on longer. In six weeks the patient was quite well. An appearance of the catamenia on the 24th of October, and once afterwards. (*Baxter, Med. & Phys. Journ.*, vol. xxv. p. 210, and *Med.-Chir. Trans.*, vol. xxxv.)

CASE 121. *Inversion treated by ligature and excision*—confined January 27, 1795; considerable flooding directly afterwards; a tumour discovered next day in the vagina. On the eighth day it was expelled, and the uterus was inverted with it. It was separated to the fundus to which it strongly adhered, but the uterus could not be replaced. A ligature was therefore passed round the neck of the uterus close to the os externum, and after waiting six hours the uterus was excised below it. No pain or uneasiness followed. Patient was out of bed in fourteen days, and well in a month. No catamenia afterwards. (*A. Hunter, Duncan's Med. Annals*, vol. iv. p. 366.)

CASE 122. *Complete inversion treated by ligature and excision*—age 41; six years' standing; quite external and ulcerated. First ligature of Indian twist applied 26th March, other ligatures afterwards applied at different times, of whipcord, catgut, and wire, as the previous ones had not answered the purpose. A circular slough formed, but there was much difficulty in completely destroying the tumour. Violent pain, spasms, and vomiting, were induced by the ligatures. During the treatment the ligature was withdrawn for a week, owing to the severity of the symptoms. On the 16th of December the tumour was excised, and profuse hemorrhage occurred from some arteries, which were tied. December 31, able to leave her lodgings. January 8, superintending her domestic affairs. In three weeks a protrusion of intestine occurred through the broken cicatrix, but from this she recovered. (*Moss. Lancet*, vol. i. p. 359, 1837.)

CASE 123. *Complete inversion, treated by ligature and excision*—age 26; eight months' standing. Ligature applied June 6th, 1840, and the tumour excised below it. The latter proceeding was not attended with much pain, and but little blood flowed. Two hours afterwards there was pain of the abdomen and threatening of syncope. Patient died June 9th. Autopsy revealed six or eight ounces of blood in the lower part of the peritoneal cavity, with some signs of inflammation. The portion included in the ligature had slipped through it. Eighty leeches were applied. Death was attributed to the loss of blood, and not to the peritonitis. (*Velpeau, Clin. Chir.*, vol. ii. p. 445.)

CASE 124. *Partial inversion, treated by ligature and excision; death*—age 26. Patient much blanched by constant hemorrhage. Tumour, the size of a large pear, attached by a pedicle one inch and a half in diameter to the posterior half of the os uteri. The os uteri was dilated, and was felt as a thin layer around the anterior half of the tumour. It was supposed to be a polypus. A ligature was applied on the 18th of March, 1850, and the operation was followed by pain; but no symptoms of peritonitis. The patient passed a good night, but on the following day sickness and insensibility came on; the latter symptoms continued, with only a slight interruption on the day preceding her death, which took place on the 25th of March. Post-mortem examination revealed injection of the lining membrane of the ventricles of the brain, softening of their surface, and the central portions of both hemispheres, with slight extravasation of blood into the softened substance. The fundus, body, and part of the neck of the uterus were inverted. The portion of the organ below the ligature was gangrenous, and had partly separated. (*C. H. Hawkins, Med.-Chir. Trans.*, vol. xxxv. p. 152.)

CASE 125. *Inversion; uterus mistaken for polypus; treated by ligature and excision; death*—three or four months' standing, supposed to be polypus. The first application of ligature gave no pain. Next day, on its being tightened, great pain followed, which was relieved by withdrawing the canula. On the third day the ligature was twisted; and on the fourth, the tumour was excised below it, as it was supposed that its vitality was destroyed. This was followed by great loss of vital power, but no vomiting or peritonitis. Death took place in twenty-four hours from the shock of the operation. (*Forbes, Med.-Chir. Trans.*, vol. xxxv. p. 152.)

CASE 126. *Fibrous tumour mistaken for inverted uterus*—Jan. 1, 1830, a middle-aged woman was brought nearly insensible into Middlesex Hospital, London, with a great globular tumour, covered with blood, hanging out of the vagina between the thighs; the patient appeared to suffer great pain when it was touched, and it presented precisely the appearance of an

inverted uterus, the only difference being that it was more dense and compressible. Dr. H. Ley, Sir Charles Bell, and other surgeons of eminence examined the patient, and pronounced it a case of inverted uterus, and repeated unsuccessful attempts were made to reduce it. She died the next day from loss of blood, exhaustion, and peritoneal inflammation. Autopsy demonstrated that what had been supposed to be an inverted uterus, was a great fibrous tumour, covered with the lining membrane of the uterus, and attached to the cervix by a very thick coat. (*Lee's Mid.*, p. 412.)

CASE 127. *Polypus mistaken for inverted uterus; death*—Mr. Borrett was called to a lady in labour with her sixth child; found a large fleshy tumour within the vagina. Anterior lip of os uteri easily felt, posterior was occupied and covered by an attachment of the tumour, after the os had sufficiently dilated and membranes burst, the hand was introduced and the child delivered by the feet. Placenta expelled spontaneously. Left the patient at 7 A. M. and returned at 3 P. M., found her in strong pains, abdomen flat, contracted uterus, easily felt above pubis; at 8 P. M. pains continuing violent; found, on examination, a soft round tumour in upper part of vagina. Pains continued violent all night; next morning, a large, fleshy, livid tumour had been forced out of the vagina. She sank gradually, and died the next morning. Mr. Rigby examined soon after death. and pronounced it a case of inverted uterus. Autopsy revealed the uterus contracted, the orifice dragged down to os externum by a tumour, which grew from it by a thick stalk; it was attached to the posterior part of the cervix uteri, of a livid colour, and weighed three pounds and fifteen ounces. (*Lee's Mid.*, p. 413, related also by Gooch.)

CASE 128. *Complete inversion*—caused by pulling on cord by midwife; placenta adherent; profuse hemorrhage. The placenta was separated soon after by Dr. Fifield, and the uterus reposited; stimulants administered, and the patient rallied somewhat. Died in a few hours. On examining, cords were found tied around the thighs to arrest the hemorrhage. The account given by the midwife was, that she made no examination, and suddenly a violent pain came on, the child was expelled and the womb protruded. (*Fifield, Bost. Med. and Surg. Journ.*, vol. lxii. p. 907.)

CASE 129. *Complete inversion; uterus removed by linear écrasement; recovery*—age 22; very anæmic; admitted into the Dublin Lying-in Hospital, September, 1858. For twelve months had suffered very profuse discharges of blood, always coming on at the menstrual periods, and lasting for fourteen or twenty-one days. A pediculated tumour, of pyriform shape, and of the size of a walnut, was found low in the vagina; the neck of this tumour was embraced, but not constricted by the thin os uteri; it was quite insensible to ordinary manipulation; its surface was smooth, dark pink, and discharged blood when scratched. The patient had been delivered by a rude country midwife fourteen months before; the cord was broken by pulling on it. The tumour being drawn down by a volsellum, the os was entirely effaced, the vagina becoming quite continuous with the neck of the tumour. This led to the conclusion that the case was one of inverted uterus. Several attempts were made under chloroform, to effect reinversion, without success. On the 20th of October a silk ligature was passed around the neck of the uterus by Gooch's canula; this caused much pain, and some vomiting. In the evening the ligature was tightened, and again on the next day. After forty-eight hours the *écraseur* was applied below the ligature, the uterus having been drawn down by a volsellum. The chain was worked very slowly, the uterus being severed in eight minutes.

Pain attended the operation, and febrile excitement followed; opium was given, and turpentine epithems applied. In a fortnight the patient was allowed to get up. Six weeks afterwards the os uteri presented almost the ordinary appearance. A catheter passed about one-third of an inch up the cervical canal. On 27th of Dec. patient quite well, but had not menstruated. (*Dr. McClintock, Brit. and For. Med. Review*, April, 1859.)

CASE 130. *Complete inversion, treated by ligature*—age 22; second child; caused by removal of placenta; great hemorrhage. Inversion discovered, but no immediate attempts at reduction made. Great flow of blood at menstrual periods; perfectly bloodless and emaciated. None of the ordinary symptoms of anæmia present. Eighteen months after Dr. W. Channing made persevering attempts at reduction, but failed. Etherization not practised. Walls of abdomen thick, tense, and unyielding. The attempt produced violent resistance, and profuse hemorrhage. State of the external organs made the passage of the hand into the vagina impossible, or difficult to reach the womb. The ligature was accordingly applied on the 10th of June, womb came away on the 29th; patient did well. (*W. Channing, Bost. Med. and Surg. Journ.*, July 7, 1859.)

CASE 131. *Complete inversion; unreduced; death*—Mrs. ——, attended by a regular physician; labour severe; presentation natural; strong uterine contractions at the close; after-birth suddenly expelled; great hemorrhage; partial inversion followed, but was not detected by the physician. After the flow had ceased, on rising to pass water, felt something heavy and large pass the external organs, accompanied by great hemorrhage and pain. The uterus was restored to the vagina; occasional hemorrhage, very profuse, occurred; attempts to reduce the womb failed; palliatives were employed, but the patient became more reduced and anæmic, and died several months after the occurrence of the accident. (*W. Channing, Bost. Med. and Surg. Journ.*, vol. xl. p. 230.)

CASE 132. *Complete inversion; reduced; recovery*—Mrs. A., natural labour; placenta adherent, was taken away by force, being torn in three pieces, during which the uterus was inverted. Great hemorrhage followed, and severe pain, and prostration. The uterus was returned to the vagina or pelvis, the physician supposing he had reposited it; hemorrhage continued. Dr. C. was called in, "found a bowl-like cavity above the pubis," neck of the womb surrounded by a firm, fleshy ring, exquisitely tender; womb in the vagina. Firm pressure was made upon the womb, by grasping it forcibly in the hand, afterwards pressure upwards, the tumour receded, at first slowly, and as it passed the os, suddenly, by a bound. The patient had a good convalescence. (*W. Channing, ibid.*, p. 231.)

CASE 133. *Complete inversion*—Mrs. B., regular labour; last pains very violent; the child and after-birth rapidly expelled, and the womb inverted, all by the same continuous effort. The attending physician returned the uterus within the vagina. Dr. C. was sent for, who at once reduced it in the usual manner. The womb was entirely relaxed; no contraction took place after the last pain. (*W. Channing, ibid.*, p. 231.)

CASE 134. *Complete inversion; womb removed by ligature; recovery*—Mrs. C., age 24, natural labour; placenta adherent, was forcibly removed in pieces, with great pain, and much flooding. Inversion doubtless occurred at this time; occasional hemorrhages, great exhaustion, anæmia, &c., followed. No examination seems to have been made by her attending physician, who also had attended her in labour, and the inversion was not detected till one year afterward, when Dr. C. was called in. The uterus

was ligated, and came away in due time; recovered, but no menstruation afterwards. (*W. Channing, ibid.*, p. 232.)

CASE 135. *Complete inversion*—Mrs. ——, age 22, natural labour, placenta adherent, and removed by force, followed by great pain and hemorrhage. For a year troubled with floodings, and the other usual symptoms of inversion. Another physician was called in, and detected inversion, hitherto undiscovered. Dr. Channing was now called; found patient greatly prostrated, and sinking rapidly. Applied a ligature to the womb; this was gradually tightened as the patient could bear it. Ligature and uterus came away on the thirtieth day. Diameter of uterine mass two and a half inches, very solid; good recovery. (*W. Channing, ibid.*, p. 232.)

CASE 136. *Complete inversion; ligature; death*—Mrs. ——, age 35, labour natural; inversion somehow occurred, but was not discovered by the attending physician. Flooding, exhaustion, emaciation, pain, &c., followed. At the end of one year, Dr. C. was called in, and detected inversion. Ligature applied; tightened daily; at about the tenth day she was moved for the purpose of changing her dress and bedding; patient fainted, and became cold, reaction could not be brought on, and on the third day after she died. Examination showed the ligature held by a mere thread of fibre; separation of the womb was perfect, and not the smallest evidence that the ligature had caused disease. (*W. Channing, ibid.*, p. 233.)

"Four other cases of inverted womb," says Dr. C., "have occurred in my neighbourhood, two of which I heard of, which were treated by ligature, by other physicians, and successfully. They present one fact, in which they were related to many of the cases which have come under my notice; they were not diagnosticated at the time when inversion happened, and their symptoms were, of course, ascribed to something else. In two of the four cases above referred to, inversion was taken for polypus. The ligature was applied, the pain of tightening it in both cases far exceeding that which is ever felt in polypus treatment (some slight and temporary pain being now and then felt in the latter). The tumours in both cases were regarded as polypus, until being presented by the operators at meetings of medical societies, they were found to be *inverted uteri*. The patients recovered." (*Loc. cit.*, p. 231.) Another chronic case of inversion is also reported by Dr. C. as having been seen by him, but the particulars are not given. We are, however, left to infer that the inversion had not been detected by her former physician. (*Ibid.*, p. 229.)

CASE 137. *Spontaneous inversion and gradual replacement of the uterus by mechanical means; recovery*—primipara, not discovered till the third day after delivery; at what time, or in what manner it took place, was not clearly known. The uterus was protruded nearly an inch from the external orifice of the vagina, and its mouth carried high up; orifice completely contracted. Efforts to replace it caused great pain, and were unsuccessful; frequent syncope, pulse thready, and her countenance deathlike. Subsequent attempts at replacement, caused syncope and convulsions, and were useless; urine had to be drawn off by the catheter; repeated hemorrhages; a staff eight inches long was now made, with a knob of the size and form of a hen's egg, at one extremity, the fundus uteri, having been depressed with the end of the thumb as far back as possible into the cavity, the knob of the staff was then introduced into the depression, and the other end fixed by a moderately tight T bandage; after this, the patient had little pain, and all bleeding ceased. On the sixth day after delivery, and the third after the introduction of the staff, it was withdrawn,

and the vagina cleansed. The fundus uteri had already been forced two inches upwards; the same treatment was continued, and the next day the uterus was found completely reduced. The patient had a favourable recovery. (*Borggreve, Medicinische Zeitung*, June 9, 1841; *Brit. and For. Med. Rev.*, April, 1842.)

CASE 138. *Complete inversion, unreduced, attended with trifling inconvenience.*—Lisfranc relates a case of a woman, aged 70, while convalescent from bronchitis, was permitted to remain in La Pitié; she exercised in the court of the hospital, the greater part of the day; her appetite and digestion were excellent; she experienced no pain in the pelvis, and had no vaginal discharge. She afterwards died from a second attack of bronchitis. On dissection, the uterus was found completely inverted. (*Lisfranc, Clin. Surg.*, vol. iii. p. 393.)

CASE 139. *Inversion of uterus; ablation of womb; death*—labour natural; placenta adherent, and broken by pulling at the funis; great hemorrhage in consequence; the attendant left. In fifty hours was sent for, no attempt having been made to relieve the patient, and on his attention being called to something hanging from her, he used considerable exertion, giving great pain, and saying there was a false conception, proceeded with a pair of scissors to remove it, during which the patient fainted and died. The parts removed were preserved, and proved to be the uterus, right ovarium and tube, part of the vagina, part of the left Fallopian tube, the greatest part of the rectum, cæcum, appendix vermiformis, the ascending portion of the colon, the right side of the transverse arch, all the ileum, and inferior part of the jejunum, altogether many feet of the small intestine, with part of the mesentery, and the greater part of the omentum majus, which had been torn away from the right side of the large curvature of the stomach, &c. The practitioner was tried for murder and acquitted. (*John Boy's Ramsbotham's Process of Parturition*, Am. ed., p. 616.)

CASE 140. *Inversion remaining undetected for twenty-five years.*—March, 1858, I was called to see Mrs. J. D., age 45, who was suffering from severe occasional hemorrhages, and had been for twenty-five years, which had produced excessive anæmia, debility, and suffering, for the whole of that long period. Her sickness and ailments dated from the birth of her first and only child. On examination, I found a tumour of a conical shape projecting into the vagina, which I supposed was a polypus, or fibroid tumour, but a second examination satisfied me that it was the uterus inverted, inasmuch as the os uteri could be felt forming a ring at the upper part of the vagina, and embracing the root of the tumour, without adhering to it, the finger passing between the ring and the root of the tumour, but soon checked by a circular *cul-de-sac*. On explaining the nature of the case to the patient, a very intelligent woman, she expressed her belief that the accident occurred at the period of the birth of her only child, twenty-five years ago. She represented that her labour was natural but tedious, that the after-birth not coming away, the doctor in attendance, a regular physician, removed it, using considerable violence, that it was followed by severe flooding and faintings, which recurred at intervals, and kept her weak and miserable; that she had never since enjoyed comfortable health, or been capable of doing much work about the house, being subject every two or three weeks to great loss of blood, &c.; that she had employed several physicians, but none of them proposed a vaginal examination, nor had discovered the nature of her malady. I proposed to remove the uterus by ligature, to which the patient gave consent; but as she had reached that

period when the menstrual flow generally ceases, it was suggested to wait a few months, as her life was in no immediate danger, and see whether it might not make a favourable change in the state of her general health. In a few months the hemorrhage entirely ceased, and for the last year she has enjoyed a very comfortable state of health, her anæmic symptoms and general debility have also disappeared; she is able to take a good deal of exercise, and, in short, so much is she improved every way, that the idea of an operation has been abandoned. (*C. A. Lee.*)

CASE 141. *Partial inversion; unreduced; feeble health*—primipara; seen by Dr. Robert Lee fourteen hours after the accident, who states that it was the only case of inverted uterus he had seen in London. Labour easy; *umbilical cord very short and twisted firmly round the neck;* placenta spontaneously expelled in half an hour after delivery, with the inverted uterus attached to it. Placenta was detached, and efforts made to reduce the womb, which proved unsuccessful, owing to the firm contraction of the neck. Hemorrhage not very profuse; uterus felt to the touch like a soft cricket ball. Patient suffered ever after from pain, profuse menorrhagia, and leucorrhœa. (*Robert Lee's Midwifery*, Am. ed., p. 416.)

CASE 142. *Reduction of an inverted uterus of fifteen years' duration; death*—patient 17 years of age when inversion occurred, in labour with her second child. Fourteen days after the accident she was seen by Dr. White, and inversio uteri was diagnosticated. Has since been subject to repeated hemorrhages and constant leucorrhœa, and become very much prostrated and anæmic. Reduction was effected fifteen years after by Dr. White, in about fifty minutes. Chloroform was administered, and the difficulty of reduction is stated to have been little if any greater than in the case of six months' standing (see Case 85). Died sixteen days after of peritonitis. Post-mortem examination, six hours after death, disclosed considerable liquid effusion (from two to three pints), turbid, and containing flocculi of lymph in the peritoneal cavity, and lymph between the intestinal convolutions. The uterus was normal in size; the os presented nothing abnormal; no trace of any laceration anywhere; its structure and inner surface appeared healthy, although upon its exterior surface were a few patches of soft, loosely-adherent lymph; *ovaries* normal in size and appearance. (*J. P. White, Am. Journ. Med. Sci.*, July, 1858, p. 13.)

CASE 143. *Spontaneous complete inversion; reposited; recovery.*—Dr. George J. Fisher, of Sing Sing, has kindly communicated to me the following interesting case of spontaneous inversion: "Mrs. E. P. B., an American lady, aged about 26 years, was taken in labour with her second child, Feb. 9th, 1855. The labour, if at all remarkable, was characterized by the suddenness and violence with which the uterine contractions returned, lasting but a few seconds, and relieved by long intervals of perfect freedom from pain. The patient was cheerful and hopeful in the intervals of the paroxysms. Six hours from the commencement of the labour she was delivered of a male child, well formed, weighing about eight pounds. The patient and nurse informed me that in her first confinement the placenta was adherent, requiring the introduction of the hand to separate it from the uterine connections. Having learned this history of her previous delivery, I avoided the slightest traction on the cord. I remained by the side of the patient for nearly half an hour before the first contraction occurred; during which time I held the umbilical cord loosely in one hand, laying the other over the lower part of the abdomen, the patient in the mean time conversing freely about her previous confinement, and the probabilities of

being subjected to the same operation for the removal of the placenta. Without the slightest premonition, she was suddenly and violently seized with one of those paroxysms of uterine contractions, accompanied with a shriek much louder than when the child was expelled. She instantly fainted, became cold, pulseless, and presented every appearance of immediate dissolution. At the moment of this fearful pain, I felt the placenta come down in contact with my hand. I attempted to remove it, but found that it was attached. I discovered to my great astonishment that the womb was inverted, and that the placenta was adhering by several square inches. After gently separating the placenta from the fundus of the uterus, which had been expelled beyond the labia pudendi, an effort was made to compress and return the womb; but as the patient's vitality had been so much depressed by the shock of the accident, I feared to persevere until measures were taken to rally the energies of the nervous and circulatory systems. Therefore the immediate restoration of the organ was abandoned; two hours were expended in efforts of this kind, by the liberal use of general and diffusive stimulants, artificial heat, &c. At the end of this time an effort was made, which soon resulted in restoring the womb, in *situ naturale;* very little hemorrhage occurred during the time. The patient remained greatly prostrated for many days. A highly putrescent vaginal discharge continued for nearly two weeks, accompanied by hypogastric tenderness, chills, and a low grade of irritative or puerperal fever. The patient had a lingering convalescence, and has since suffered from uterine disease, characterized by purulent discharge from the uterine cavity. Nearly three years elapsed before she was able to be generally about house. She was subjected to a variety of treatment, such as touching with solid nitrate of silver, intra-uterine injections of a solution of nitrate of silver, which I now regard as extremely dangerous treatment. The purulent discharge ceased under the use of Dr. B. Fordyce Barker's uterine ointment, composed of crystals of nitrate of silver, extract of belladonna, and spermaceti. This I introduced into the uterine cavity with an improved ointment tube, having a piston, &c. Under this treatment every five or six days, through several weeks, she is quite restored to health. This ointment is very kindly borne by the uterine surface, and is the best alterative I know of."

CASE 144. *Spontaneous partial inversion; reduced three weeks after delivery; recovery.*—For the history of the following case of inversion I am indebted to my friend, Prof. J. P. White, M. D., of Buffalo. "This case," he remarks in a recent letter, "occurred in the practice of Dr. Mackay, of this city. It was incomplete, the fundus of the uterus protruding through the neck an inch or more. This probably was spontaneous; it certainly was not suspected until three weeks after labour, and seemed the result of violent, bearing-down pains, which were promoted, if not induced by imprudent exertions on the part of the patient. I may remark that this last case, obscure as the diagnosis certainly was, being determined only after an intelligent vaginal examination, is the only one in which the nature of the accident had been suspected by the physician or midwife having the patient in charge when the accident occurred. Dr. M. called upon me informing me of the condition of the parts, and requesting me to make the reduction. I immediately accompanied him to the residence of the patient, when I found, as he had described, a partial inversion, the os embracing firmly the body of the organ, protruding an inch, or an inch and one-fourth. Holding the fundus between the fingers of the right hand, I introduced into the vagina and brought the end of Simpson's sound covered with a rag, to

enlarge it somewhat, to bear upon the fundus, making pressure with the left hand upon the handle of the instrument external to the female organs. A few minutes of gentle pressure sufficed for its restoration, perfect quietude was then enjoined, and the woman made a perfect recovery. It is worthy of remark, that in this instance, as well as the others, the mechanism of reduction consisted in folding the uterus upon itself, the neck passing down over the body and then over the fundus of the organ, without being at all promoted by the dimpling of the fundus, as some authors contend."

CASE 145. *Complete inversion caused by midwife pulling on the cord.*—Prof. J. P. White writes to us: "My fifth case occurred in the practice of a midwife, terrific flooding succeeded, when I was sent for, and immediately reduced the inversion. The uterus was completely inverted, lying between the mother's thighs, the placenta being detached by the midwife, after inversion. She also pulled *forcibly* upon the 'tumour,' but could not 'get it away as the woman fainted, and she got scared,' and sent for me."

CASE 146. *A case of inversio-uteri supposed to be spontaneous; reposited at about the end of four months; recovery*—Mrs. S., aged 20; primipara. When in labour, April 9th, 1858, at 4 P. M., in addition to regular labour pains, complained of severe pain in right side, between fourth and fifth ribs; delivered at 7 P. M.; no unusual pains except that in the side; cord rather short, and might have pulled on the placenta, which came away at the first pain without any assistance; some flooding, but not enough to produce alarm or syncope; uterine tumour was felt above the pubis. Cloths wet in cold water were applied to abdomen. Severe pain in right side continued for several hours; after-pains about as usual. Pain in side pretty much subsided on fourth day; no fever, pain in back, or tenderness of bowels; pulse more frequent than natural; no secretion of milk. On the 19th, visits discontinued; patient supposed to be doing well. On 7th May, was called again, eighteen days after discontinuance of visits; found she had been flooding two or three days; had been up and out to her meals; sung, played on piano, &c.; had no pain in back, or soreness of bowels; hemorrhage deemed to be the only trouble. From the 7th to 18th of May, cold applications, astringent injections, &c., were used to check the flooding, without much success, when a digital examination disclosed inversion of the womb. Dr. N. S. Davis was called in consultation, and it was concluded "that as the inversion was complete, and the patient very nervous and excitable, it would be safest and best to encourage her all we could, and not then try to return it; for if we undertook to do it, in the condition she then was, we should surely fail in our attempt, and it might endanger inflammation. We therefore advised astringent injections, with nutritious diet, and encouraged her with the hope of a spontaneus replacement, as there were cases of the kind on record well authenticated; intending all the time to watch the case and reduce it when she should be in a proper condition. Visited her daily almost, till the 14th July, when she went east." The uterus was reposited successfully, a few days after the above date, by Dr. H. A. Potter, of Geneva. (*A. Fisher, Chicago Med. Journ.*, Oct. 1858, p. 510.)

Remarks.—The above case is remarkable, according to the report, for the absence of any prominent symptoms indicating inversion up to the 7th of May, nearly a month after delivery. Still I think there can be little doubt that partial inversion, at least, existed from the time of delivery, which became complete, about the time the doctor was called in on the 7th May. As no examination had been made from the time of the delivery of the placenta, it would seem to have been highly proper to have exa-

mined at this time, to have discovered the cause of the hemorrhage; but this was neglected for eleven days longer, during which the hemorrhage continued. Had the rule of Denman been followed, viz., "to examine in all cases where hemorrhage occurs subsequent to delivery, to discover whether inversion may not be present," the accident would have been earlier discovered, and probably reposition effected without difficulty. The case, in this point of view, is a very instructive one.

CASE 147. *Complete spontaneous inversion*—Mrs. A.; no physician or midwife in attendance. Dr. F. found patient in convulsions, lying on her back, bathed in a cold perspiration; pulse almost imperceptible; thought to be dying. Adherent placenta and uterus found between her thighs. The uterine tumour, nearly as large as a child's head, had passed completely through the vagina. The tumour was compressed between both hands, till its size was sufficiently reduced, when it was reposited without difficulty, and the patient did well. (*A. Fisher, loc. cit.*, p. 514.)

CASE 148. *Complete inversion*—placenta adherent; womb became inverted with the same pain that delivered the child; no pain; very little hemorrhage. The placenta was separated, and the uterus reposited; cord about six inches in length; placenta very small; recovered. (*Robert Smith, Month. Journ. of Med. Sci.*, May, 1846.)

Summary of the assigned Causes of Inversion of the Womb in the 148 *Cases above reported.*—In analyzing the above cases, it is to be regretted that many of the original reports are so imperfect, that we are often left to surmise the cause of the accident. This is what might, perhaps, be expected; for, if it is an accident—as many writers allege—which may, with proper care and skill, always be prevented, then it is not to be presumed that the practitioner who places much value on his reputation, will be forward to acknowledge that so serious an accident has resulted from his ignorance or neglect. Hence, also, we may look, not unfrequently, for cases of *spontaneous inversion*—cases in which the womb, without cause, provocation, or premonition, turned itself inside out, all at once, some days, weeks, or months, after delivery, on going to stool, straining, laughing, crying, singing, walking, or other kinds of exertion, or no exertion at all. And we are asked, in all seriousness, to wonder at such strange anomalies, and ask why nature should enact such freaks, without special object?

Accordingly, we find that of the 148 cases, of which an abstract is above given, the cause is assigned in only 62 cases, and of these 39 are stated *to have been attended by midwives*, a large majority of them in Europe. In 39 cases, moreover, we are expressly informed that the inversion occurred *from pulling on the cord*, viz., Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 21, 23, 25, 30, 31, 33, 45, 48, 50, 53, 56, 59, 60, 62, 63, 64, 66, 67, 83, 85, 89, 98, 101, 129, and in 7 *from attempts to deliver the placenta*, viz., Cases 73, 88, 111, 131, 133, 135, 136. In 25 cases *the delivery was very rapid*, and we are led to infer that this was generally regarded as connected, as predisposing cause, with the event; in most of these cases, it was unquestionably so. In several instances, we are informed that the pains grew very strong towards the close, and that at last, with a violent

throe, the adherent placenta and inverted uterus simultaneously accompanied the expulsion of the child. (See Case 148.) In 20 cases the labour was *natural, but slow*, and in a majority of them, at least, there were symptoms of *uterine exhaustion*, or *adynamia uteri*, where inversion doubtless occurred from, or was favoured by the extreme relaxation, or want of contractile power in the organ. In 10 cases, the *cord was very short*, and in several twisted round the neck. 2 were *forceps cases*, 1 of *twins*, and 23 are stated to have been *primipara*, viz., Cases 9, 16, 19, 20, 29, 30, 33, 49, 55, 59, 66, 68, 80, 81, 86, 87, 100, 139. It cannot be doubted, that it may be legitimately inferred from the cases reported, that by far the most frequent cause of inversion of the womb, is *traction on the cord, and attempts to extract the placenta*, for we shall soon have occasion to observe that the placenta was adherent in the great majority of cases. So that we may adopt the opinion of Dr. Robert Lee, of London (*Lectures on the Theory and Practice of Midwifery*, Am. ed. p. 410), as very nearly correct, when he says: "*Inversion of the uterus is frequently, if not invariably, the consequence of pulling at the umbilical cord, to extract the placenta* immediately after the birth of the child, before the uterus has had time to contract, and while the placenta is still adherent. It is also stated to have happened when the child has been allowed to be rapidly expelled, when the umbilical cord has surrounded the fœtus, or been unusually short."

Spontaneous.—*Spontaneous inversion* is usually understood to apply to cases which have occurred without interference or assistance on the part of the practitioner. *Twenty-three* such cases are enumerated in the 142 above given. (See Cases 37, 38, 40, 41, 42, 43, 44, 47, 50, 55, 57, 72, 76, 78, 79, 82, 132, 140, 143, 144, 146, 147, 148.)

Complete or Partial Inversion.—In *one hundred and eight* cases, the inversion is represented as *complete*, and in 18 as *partial*. By complete inversion is understood the passing of the body and fundus of the womb through the os uteri; it is not necessary that they should escape the os externum, and appear outside of the labia, for they may be concealed wholly within the vagina; but the neck should be inverted entirely to the os. *Partial inversion* is understood to be, where neither the body nor fundus has entirely escaped through the os uteri; and it may exist in different degrees, as simple depression or indentation; or, where the fundus has reached, perhaps, the centre of the uterine cavity; or, fallen to the mouth of the uterus, and is prevented from passing by the contraction of the os, or from want of sufficient propelling power; or, lastly, partly passed through the os, the body and fundus, perhaps, being strangulated by the neck of the uterus contracting forcibly upon the protruded part. That all these different grades or degrees of inversion must date from a preceding labour, if not owing to the dragging weight of a polypus, is almost self-evident; for it is not to be rationally supposed that such a process of

involution could commence without a cause, and no one can believe that after the placenta has been separated and the uterus normally contracted, that such event would be likely to happen. But we shall return to this point again presently.

Placenta Adherent.—This is stated to have occurred in 67 out of the 142 cases, viz., in Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 21, 26, 29, 31, 32, 33, 36, 37, 39, 40, 42, 43, 44, 48, 50, 51, 52, 53, 55, 59, 60, 63, 64, 66, 67, 70, 71, 72, 73, 74, 78, 81, 82, 86, 87, 88, 89, 101, 116, 129, 132, 133, 135, 136, 139, 140, 145, 147, 148. If we exclude the cases imperfectly reported, and only for the purpose of showing the results of extirpation, ligature, or excision, of which there are 40 cases, from our analysis, as not furnishing the necessary data, we have 67 out of 102 cases, in which it is stated that the placenta was adherent, and it is but fair to infer that such was the case in many of the others. This has a most important bearing on the causation of the accident, and sustains the conclusions already arrived at, regarding the influence of traction on the cord, or attempts at removing the after-birth.

Spontaneous Delivery of the Placenta.—In 14 cases of the 102, pretty fully reported, the placenta is stated to have come away spontaneously, or without manual assistance, viz., in Cases 17, 38, 47 (with slight assistance), 50, 58, 68, 76, 79, 129, 132, 134, 141, 143, 146, 147, 148. Several of these were associated with cases of rapid delivery, or where the pains were very strong and urgent towards the close. In 20 cases the labour is simply represented as *natural.*

Hemorrhage.—Severe and copious hemorrhage occurred in 49 out of 102 cases, viz., Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 25, 26, 29, 30, 31, 33, 36, 37, 38, 40, 44, 46, 49, 55, 56, 60, 62, 70, 71, 72, 74, 76, 82, 83, 84, 85, 86, 87, 88, 89, 100, 116, 129, 131, 132, 133, 135, 137, 139, 140, 142, 145, 147. *Moderate hemorrhage* occurred in 17 cases, viz., 14, 15, 16, 18, 19, 21, 23, 39, 47, 50, 51, 72, 79, 141, 143, 146, 148. There was an *absence of hemorrhage,* except on removal of the placenta, in eleven cases, viz., 33, 36, 37, 38, 40, 42, 43, 52, 57, 78, 82.

Inverted before Seen or Recognized.

Case 10 36 hours.	Case 15 10 days.	Case 21 8 months.	Case 12 2 yrs.
" 31 36 "	" 17 4 "	" 35 3 "	" 77 20 "
" 36 2 "	" 22 2 "	" 85 6 "	" 80 12 "
" 38 48 "	" 47 21 "	" 67 Several "	" 135 1 "
" 41 24 "	" 68 3 "	" 146 3 months.	" 136 1 "
" 79 48 "	" 69 16 "		" 137 1 "
			" 140 25 "

Case 27 had remained undetected several weeks; Case 66 three weeks; and Case 144 three weeks.

It seems hardly credible that in so many cases the nature of the malady

should have remained undetected for so long a time. It would seem that in very few was any vaginal examination made, although symptoms were present pointing to the probable existence of inversion. In the forty-second case, which came under my own observation and treatment, although the patient had been suffering for twenty-five years in consequence of the accident, and had been under the care of several practitioners of considerable repute, its nature had never been discovered, nor probably suspected, as no examination had been made for that purpose. The rule laid down by Denman, and so strongly insisted on by him, should never be disregarded, viz., that when, after the delivery of the placenta, if hemorrhage still continues, recurring at short intervals, attended or not with symptoms of nervous shock and great debility, a vaginal examination should at once be made, in order to determine whether inversion exists or not. Were this rule to be invariably observed, it would be the means not only of preventing much suffering, but of preserving many valuable lives.

Inverted Uterus mistaken for Polypus.—That the diagnosis of inverted uterus is not always easy, is evident from the fact that in seven cases it was mistaken for polypus, viz., in 95, 103, 114, 115, 116, 120, and 127. In Case 95, so much pain was caused by the ligature, that it gave rise to the suspicion that it was the uterus itself that was ligated, which turned out to be correct, as the organ came away with the ligature at the end of three weeks. The same occurred in Case 103, where the uterine tumour came away on the 21st day. Velpeau made the same mistake, which was corrected in a similar manner, although the patient died on the fifth day after the ligature was applied. (See Case 114.) Case 115 is interesting, from the fact that a recently inverted uterus, with the placenta still adherent, was mistaken by the attending accoucheur for a polypus, the placenta removed, and the uterus ligated, immediately after delivery, and returned within the vagina, July 6th. On the 1st of August the uterine tumour came away, and death followed on the 12th from peritonitis.

Polypus mistaken for Inverted Uterus.—Two such cases are included in our list, Nos. 128 and 129. The first is remarkable from the fact that the false diagnosis was made by Dr. Hugh Ley, and concurred in by Sir Charles Bell; while in the second, the same mistake was made by the distinguished writer on midwifery, Dr. Rigby. In this case the placenta had been separated spontaneously, and there was no hemorrhage.

Inversion caused by Polypus.—Several such cases have been recorded; we have given three, Nos. 34, 61, 90, and referred to several others. In the first, the tumour was forced into the vagina by the act of vomiting, where it remained three months before it appeared externally. In Case 61, a fibrous tumour had been excised a year previous; another formed, and by its weight inverted the womb. The sensibility or insensibility of the tumour would seem to be the most reliable means of diagnosis. It would appear that little difficulty could occur, where an examination is made soon

after the accident, and yet one such case is given. Our chief reliance in forming a diagnosis must, after all, be the history of the case, and the sensibility of the tumour. We are told by Sir C. M. Clarke, that in a case of polypus the os uteri encircles the tumour, and that in inversion of the womb the os uteri forms a part of the tumour itself. But in the chronic case of twenty-five years' standing which we have related (Case 142), the os uteri certainly encircled the tumour in the form of an elastic ring, or raised belt; we can readily imagine, however, that cases might occur where it would be very difficult to distinguish a polypus from an inverted uterus.

Uterus reposited.—The number of cases of *reposition of the uterus* is 51 out of 148 cases, viz., Cases 1, 7, 8, 9, 15, 18, 19, 23, 25, 28, 29, 32, 33, 36, 37, 39, 40, 41, 42, 43, 49, 53, 56, 57, 58, 64, 69, 70, 75, 74, 76, 78, 79, 80, 81, 82, 83, 84, 88, 86, 129, 132, 133, 137, 142, 143, 144, 145, 146, 147, 148.

The following table gives the results :—

Summary of 52 *Cases of Reposition of the Uterus.*

No.	Operator.	Age.	Time after the accident.	Result.
1	Robert Lee		Half an hour	Died from flooding.
7	C. D. Meigs		One hour	Recovered.
8	Betton		One hour	Died in one hour.
9	Denman		A few minutes	Recovered.
15	Teallier		Two days	Recovered.
18	Dewees		Half a minute	Recovered.
19	Dewees		Three hours	Recovered.
23	Lucas		Half an hour	Died in one hour.
25	Ramsbotham		Half an hour	Died in one hour.
28	Charles White		Half an hour	Recovered.
29	D. P. Bissell	24	Immediately	Recovered.
32	Williams		Immediately	Recovered.
33	Radford		Fifteen minutes	Recovered.
36	Radford		Two hours	Recovered.
37	Mann		Ten minutes	Recovered.
38	Radford		Supposed spontaneous, six months after	Recovered.
39	Radford		Immediately	Recovered.
40	Radford		Immediately	Recovered.
41	Radford		Twenty-four hours	Recovered.
42	Ashwell		Forty-five minutes	Recovered.
43	Ashwell		One hour	Recovered.
49	Smart		Three weeks	Recovered.
53	J. P. Gazzam		Ten days	Recovered.
56	Skae		Eleven days	Recovered.
57	E. Fisher	35	Immediately	Recovered.
58	Snackenbergh	27	Immediately	Recovered.
59	Coley		Seven years	Recovery.
69	G. Mendenhall	24	Sixteen days	Recovery.
70	Charles West	23	Three months	Recovery.
74	Burrows	24	One hour	Died in twenty minutes.
75	Burrows		Immediately	Recovered.
76	T. R. Mitchell		Immediately	Recovered.
78	Geo. Johnston	19	Immediately	Recovered.

Summary of 52 Cases of Reposition of the Uterus—continued.

No.	Operator.	Age.	Time after the accident.	Result.
79	E. P. Bennet		Thirty hours	Recovered.
80	Tyler Smith	18	Twelve years	Recovered.
81	Borham	25	One hour	Recovered.
82	Leonard	34	Immediately	Recovered.
83	Ellis		Immediately	Recovered.
84	J. A. Brady	23	Immediately	Recovered.
85	J. P. White	19	Six months	Died on third day.
86	J. P. White	30	Six months	Recovered.
87	J. C. Crosse	29	Immediately	Recovered.
132	W. Channing		In a few hours	Recovered.
133	W. Channing		Soon after	Recovered.
137	Borggreve		Third day	Recovered.
142	J. P. White	17	Fifteen years	Death 16 days after operation.
143	Geo. J. Fisher		Immediately	Recovered.
144	J. P. White		Three weeks	Recovered.
145	J. P. White		Immediately	Recovered.
146	H. A. Potter	20	Four months	Recovered.
147	A. Fisher		Immediately	Recovered.
148	Robert Smith		Immediately	Recovered.

Thus it appears that of the 52 cases in which the uterus was reposited, a fatal result followed in 7 only, one in 7.3; in two, from peritoneal inflammation, and the rest from hemorrhage and exhaustion. The latest period in which reduction of the womb was accomplished, was Case 144, reported by Prof. J. P. White, where fifteen years had elapsed since the occurrence of the inversion. The fatal result in this instance from peritonitis was regarded by him and his associates as accidental, and would not deter him from a similar attempt in a case of still longer standing. Although the operation would seem to be extremely hazardous so long a period after the occurrence of the accident, yet the success of Tyler Smith, in a case of twelve years' standing (Case 80), of Dr. Coley in one of seven years, and one of Charles West of three months' standing, will certainly justify the operation in cases perhaps still more chronic than this of Dr. White. It may, however, yet be found that extirpation of the womb by ligature is safer to the patient; but far more extensive statistics than we have at present are necessary to establish any rules regarding these operations.

Spontaneous Reduction.—Three cases in our list are represented as those of spontaneous reduction, viz: Cases 12, 13, and 38.

In Case 12, we are informed by Prof. Meigs that the inversion had existed for two years, and had taken place at the time of delivery, when she had a very profuse hemorrhage, so as to be supposed to be in danger of a fatal result; that her health gradually improved, although she remained subject to frequent attacks of hemorrhage, which greatly reduced her strength; that a physician was called in who detected the existence of inversion, and called in Dr. M. to verify the diagnosis. Dr. M. states that he found the womb projecting into the vagina, and believed it to have been

completely inverted. It was not much larger than the non-gravid womb; bled readily from pressure; was not very sensible to the touch. Dr. Moehring and Warrington, as well as Prof. Hodge, all examined the patient and agreed with Dr. M. in the diagnosis; attempts were made at its reduction, which proved unsuccessful. Four years after the patient became pregnant, and was attended by Dr. Warrington. The uterus was supposed to have been spontaneously reduced.

Cases of supposed spontaneous reduction have been recorded by different writers. Baudelocque states, that "the organ, after having been long inverted, has been seen to reduce itself spontaneously, in consequence of a violent accidental shock; and from a letter by Laroux, addressed to Louis, which is mentioned in *Daillez's Thesis*, the spontaneous reposition of the womb has been known to take place two months after the occurrence of the accident." (*Meigs' Trans. of Colombat*, p. 182.) If we admit the correctness of the diagnosis in this case, then we must, of course, acknowledge that an inverted womb may be spontaneously reduced. But while no one can question the eminent skill and experience of the reporter and his colleagues, we presume no one will claim for them infallibility. The history of the case is not altogether satisfactory, inasmuch as we are not informed in regard to the circumstances attending the inversion, how it happened, who attended the patient, &c. It seems not to have been suspected or detected for two years; was there not a mistake in the diagnosis, and a polypoid tumour, which afterwards sloughed off, as occasionally happens, mistaken for an inverted uterus? We have already related cases in which Sir Charles Bell, Hugh Ley, and Mr. Rigby, made a similar mistake, if this be one. The celebrated Paoli, in his *Researches and Observations on Surgery* (Leipsic, 1844), relates an instance in which, after repeated careful examinations, himself and five other surgeons could not agree in opinion as to the nature of the case, four supposing it to be an inversion of the uterus, whilst himself and Dr. Dampierre maintained it to be polypus. The woman died of internal inflammation, and the latter opinion was found to be the correct one. So M. Baudelocque states that he observed inversion of the uterus in a young girl of fifteen, who had never been pregnant. But A. Dubois states that, in his opinion, M. Baudelocque, in this instance, mistook a polypus for inversion of the uterus. So difficult, indeed, is the diagnosis in some of these cases that a mistake, even, is no impeachment of the knowledge, skill, or tact of the practitioner. Paoli (*loc. cit.*) has undertaken to show that the cases which have been published in various periodicals of late years, as instances of inverted uterus successfully extirpated by ligature, have been really cases of polypus of the uterus; and his reviewer (*Brit. and For. Med. Rev.*, July, 1846) remarks, that "his explanation of the nature of the disease appears to be the correct one, for we are much more ready to suppose an error of diagnosis than to believe that the uterus has been separated by ligature in a few days, with

little or no inconvenience to the patient, as we find related in more than one instance;" and this is said, too, in regard to cases in which the diagnosis could, with certainty, be verified or disproved, after the operation, by an examination of the part removed. We shall, however, see further on, that this remark of the reviewer is not in accordance with the existing facts of the case; we mean so far as regards the possibility of a safe removal of the uterus by ligature. But it is to the point as regards the acknowledged difficulty of diagnosis. With respect to the case of M. Baudelocque, above referred to, which he regarded as *congenital*, M. Lisfranc (*Clinical Surgery*, vol. iii.) admits the possibility of inversion, but considering distension and softening of the uterus from some cause essential to inversion, asks, Why may not the patient have been affected with retention of the catamenia, hydrometra, uterine hydatids, &c.? So, also, M. Colombat thinks that inversion probably existed, but that it took place in consequence of the distension of the parietes of the womb produced by retention of menses, an accumulation of serum, or the extrication of gases in the organ, and, subsequently, expelled suddenly. Must we admit, as established facts, the cases related by Puzos and Vigaroux, where females who had never borne children are said to have undergone inversion, the only cause being *obesity and the weight of the bowels resting on the womb*? However, if we must admit that the uterus can spontaneously invert itself, turning itself inside out, it is but right, perhaps, that we should also believe in its ability to turn itself back again!

In Case 13, also reported by Dr. Meigs, the same remarks will apply. The case was first seen by Dr. M. five weeks after delivery, and, though attended by a respectable practitioner, no inversion had been detected until two days before consultation was requested. She also became pregnant afterwards and gave birth to a living child. It seems to us more probable, by far, that a polypus had existed throughout the gestation, which is admitted as possible by Dr. M. in certain cases, than that the womb was inverted, and afterwards spontaneously reposited. The same supposition is probable in regard to Case 38, in which a large tumour was found by Dr. Radford in the vagina, forty-eight hours after delivery; but at the end of seven months could not be detected. We are told that the remains of the os uteri could be felt, but no regular aperture, the upper part of the vagina forming a complete "*cul de sac*." There is no good reason for supposing, in this case, that there was any reinversion of the uterus, even supposing inversion to have existed, of which there is some doubt.[1]

Cases in which the Placenta was separated before Reposition.—The cases in which the adherent placenta is said to have been detached from the womb before reposition were, 7, 8, 9, 18, 19, 29, 31, 33, 37, 39, 42, 43, 44,

[1] For several supposed cases of spontaneous reposition see Gardien, vol. iii., and Dict. des Sci. Méd., vol. xlvii. p. 465.

50, 52, 53, 55, 56, 78, 79, 82, 129, 132, 133, 137, 142, 1[illegible], 146, 147, 148, a total of thirty-one.

In several of these, unsuccessful attempts were made to reposit the womb before separating the placenta.

Cases in which the Placenta was not separated before Reposition.—These were only ten in number, viz: Cases 30, 32, 36, 40, 58, 63, 74, 75, 83, 84. These were cases in which the womb became inverted from strong expulsive pains, aided, in several instances, by traction on the cord and pressure over the hypogastric region, under the charge of regular physicians; where advantage was immediately taken of the open and relaxed state of the os uteri to return the organ and secundines, before any contraction whatever took place. A review of all the cases on record goes to show, what would be concluded, *a priori*, that the most favourable time for effecting a reduction is immediately after the occurrence of the accident; and, if this opportunity be embraced, there will rarely be much difficulty in repositing it even with the placenta attached. It seems somewhat strange that this should have been discussed by so many writers as an abstract question, for whether it be proper to remove it before reducing the displacement will depend altogether upon the circumstances of the case. Professional opinion is about equally divided on this point. But certainly the rule of Merriman is a very safe one when practicable, and, perhaps, the best to follow, viz: to reverse the organ without reference to the placenta when it can be done; but if impracticable to peel off the placenta, using every precaution against hemorrhage, and then to return the part without delay. Had this course been pursued in some of the cases above reported, it would doubtless have been the means of saving life by preventing the loss of blood, for time would have been allowed for the administration of stimulants, and for reaction to take place before the separation of the after-birth. It is true that its detachment will be more difficult after the replacement of the uterus, and that the replacement is rendered more difficult by the adhesion of the placenta; but we are only speaking of cases where its attachment does not prevent reposition of the organ. In the large majority of cases I do not suppose there is much to apprehend from hemorrhage if we proceed with promptitude and dispatch. Mr. Radford found, in all his cases, that no such fatal effect followed the separation of the placenta before its return, for, when entirely detached, he states that he found the uterine vessels as effectually restricted as if the organ was in its natural situation. The flooding he supposed to be due to a partial separation, and, as in other cases, to be checked by a total detachment.

There is another advantage in separating the placenta before reposition, which is, that we can compress the fundus and thus reduce its size, while, at the same time, we check the flooding by the compression made. Denman says: "If the placenta be partly separated, it would be proper to finish the separation before we attempt to replace the uterus; but if the placenta

should wholly adhere, it will be better to replace the uterus before we endeavour to separate the placenta." Carus observes: "If the inversion be quite recent, and the placenta still adhere to the uterus, it is best to return the uterus before separating the former; but if it be in a great measure detached, which is by far the most frequent occurrence, it is advisable to separate it completely before returning the uterus." Siebold also advises that the placenta should not be detached if the reduction can be accomplished without its removal; but if this be impossible, he advises its separation at once. Newnham, Blundell, Gooch, Burns, Clarke, and other standard writers, give the same advice. Those who take the opposite view do so on the ground that the diminution of the volume of the tumour, and the consequent facilitation of its reduction, far counterbalances the danger of hemorrhage.

Cases of Inverted Uterus Removed by Ligature.

No.	Operator.	Age.	Length of time after inversion.	Result.
62	Symonds	16	Nine months	Died on the 6th day.
67	Gooch		Two and a half yrs.	Recovered, lig. came away on 14th day.
71	C. G. Putnam	22	One year	Recovered, came away on 11th day.
72	C. G. Putnam	25	Eight months	Died on 9th day.
73	C. G. Putnam	23	One year	Recovered, lig. came away in 14 days.
88	J. G. Crosse	31	One month	Recovered, lig. came away in 12 days.
89	G. M. Esselman	32	Several months	Recovered, lig. came away in 15 days.
91	Windsor	39	Eighteen months	Recovered, lig. came away on 12th day.
92	Newnham	26	Three months	Recovered, lig. came away on 23d day.
93	Johnson		Over two years	Recovered.
94	Johnson		Many years	Recovered, "considerable time."
95	Johnson	20	Fourteen months	Recovered, came away in 3 weeks.
96	Johnson	27	Six years	Recovered, came away on 19th day.
97	Denman	60	Many years	Recovered, came away on 11th day.
98	A. H. M'Clintock	24	Five years	Recovered, came away on 28th day.
99	Johnson	24	Five years	Recovered.
100	Weber	37	Fifteen days	Recovered, cut away on 5th day.
101	Faivre	19	Few days	Recovered, came away on 17th day.
102	Martin		Two years	Recovered, came away on 19th day.
103	Martin		Six months	Recovered, came away on 21st day.
104	Martin	54		Recovered, came away on 20th day.
105	Bonepet		Three years	Recovered.
106	Blundell		Sixteen months	Recovered, came away on 11th day.
107	Blundell			Recovered.
108	Gooch		Two years	Recovered, came away on 14th day.
109	Crosso	31	One month	Recovered, came away on 8th day.
110	Gregson		Two years	Recovered, came away on 9th day.
111	H. Davies	27	Four months	Recovered, came away on 21st day.
112	Ramsbotham		Ten and a half mos.	Recovered.
113	Dubois			
114	Velpeau	36	Three months	Died on 5th day.
115	Boivin	24	Day of delivery	Died on 36th day.
130	W. Channing	22	About two years	Recovered, came away on 17th day.
134	W. Channing	24	One year	Recovered.
135	W. Channing	22	One year	Recovered, came away on 30th day.
136	W. Channing	35	One year	Died, from asthma, very low before operation.

Of the whole number, thirty-two, in which the uterus was removed by ligature, *only four died, or one in eight*, which is a rate of mortality very far below what we should have expected. Indeed, it is very evident that obstetrical writers generally have greatly overrated the danger of this operation. We have already seen that Paoli, supposing that the operation must necessarily be fatal, infers that there has been a mistake in the diagnosis in all such cases, and that, in fact, they have all been cases of *polypus uteri*. *Twelve per cent.* is about the average mortality of all cases treated in our large hospitals; in some it is much higher; and yet this is only the rate after this operation, and that, too, when in a majority of the cases the patients have been greatly exhausted and debilitated by constantly recurring hemorrhages and a general anæmic condition. The question whether this operation, or attempted reduction in chronic cases, is safer as a general rule, can only be determined by more extended experience and a larger number of well-managed cases. With our present light on the subject, it would seem that the preference should be given to ligation over reposition; our data, however, are not sufficient to warrant any positive conclusion. There are other circumstances to be taken into consideration in deciding this question, such as the age of the female, the general health, &c. In the case of a young woman, to whom a family is desirable, reposition should certainly be attempted, within the bounds of safety, if there is any such thing as defining them, which may well admit of doubt; but in females past the age of child-bearing, if the general health still suffers, ligation would doubtless be preferable. There is, however, very good reason to expect that if a female, labouring under inversion, passes that period of life when the menstrual flow usually ceases, we may expect a cessation of the hemorrhages and probably also of the sero-mucous discharges, which hitherto had kept her weak and miserable. Such was the case in the instance I have related (140), the patient, at present, enjoying a very comfortable state of health, her anæmic symptoms, &c., having disappeared. In performing the operation, it would seem also that the safety of the patient is much enhanced by gradually tightening the ligature, as she can bear it, and also relaxing it occasionally if the constitutional suffering is very great, and not wholly strangulating the uterine tumour at once, as has in some instances been practised. If the uterus be mistaken for a polypus, no harm would result, as the same treatment should be adopted for the latter, and we have seen that such mistakes have often been made even by the most experienced practitioners. Where death has resulted from ligation, it has been in consequence of peritoneal inflammation, one patient having died on the fifth day, one on the sixth, one on the fourteenth, and one on the thirty-sixth. The last was where a ligature was applied immediately after delivery (No. 115).

Cases of Inverted Uterus Removed by Excision.

No.	Operator.	Age.	Length of time since inverted.	Result.
77	E. Geddings	"Aged"	Twenty years	Recovered, ligature and excision.
90	Luytgaerens		Not stated	Recovered, caused by polypus.
116	Velpeau	24	Three years	Recovered.
117	Velpeau	35	Fifteen years	Died second day of peritonitis.
118	Lasserre	23	Eighteen months	Recovered, ligature and excision, well in 30 days.
119	Clarke	"Young"	Eleven months	Recovered, ligature and excision.
120	Baxter	37	Five weeks	Recovered, ligature and excision.
121	A. Hunter	"Young"	One month	Recovered in 10 days, ligature and excision.
122	Moss	41	Six years	Recovered, ligature and excision.
123	Velpeau	26	Eight months	Died from bleeding on third day.
124	C. H. Hawkins	26		Died on seventh day from disease of brain.
125	Forbes		Four months	Died from shock of operation.[1]
129	M'Clintock	22	Twelve months	Recovered, operated by *écrasement*.

Remarks.—Thus of the 14 cases of removal of the inverted uterus by incision, four died, or one in 3.5, which is a rate of mortality nearly three times as great as occurred after the application of the ligature, and yet death seems in several of the cases to have been accidental, rather than a necessary consequence of the operation. Case 118 died on the second day after the operation from peritoneal inflammation; Case 124 perished on the third day after from accidental bleeding; Case 125 died suddenly on the seventh day from disease of the brain; while Case 126 died from the shock of the operation, by asthenia, having been much reduced previous to the operation. In all the cases a strong ligature was previously applied; and to check the bleeding consequent on excision, it had to be drawn very tight; this would necessarily produce severe shock, which is avoided in the operation by ligation only, where the ligature is gradually tightened as the patient can bear it. It seems, therefore, a justifiable conclusion, that it is safer to remove an inverted uterus by ligature than by excision, or ligature and excision as hitherto practised.

In conclusion, it may be useful to sum up our results deduced from the preceding cases, and first in regard to the

Causes of Inversion.—We have seen that they are either located in the uterine system itself; or such as act on the outer surface of the organ, pressing or driving it down; or, lastly, such as act on its internal surface, drawing or pulling it down. The efficient or direct causes are the only real and active causes of the displacement; what are called the predisposing causes and conditions leave the uterus quiescent until the efficient causes determine an inversion. But, as in all other cases, the more numerous and strong the predisposing causes, the less powerful are the efficient required

[1] Mistaken for polypus.

to be for producing the accident, and *vice versa;* however strongly predisposed the patient may be, by the state of her constitution, or of the uterus and neighbouring parts, there must be a power either to push or draw down a part of the uterus, in order to commence inversion of its walls. A survey of the above cases will satisfy the impartial reader that a state of *adynamia uteri*, or *inertia*, ought to be regarded, in general, as the necessary condition for the first step in the displacement. We have seen that the stage of delivery in which inversion commences is constantly that of the removal of the uterine contents, or the principal part of them, and all accounts of its causation have reference to that stage. All the wise precautions which experienced men have enjoined for the prevention of the accident, *post partum*, relate to the avoidance of collapse, total or partial, of the uterus, and not to the dread of its contracting irregularly or too rapidly. Recent writers on this subject seem disposed to attribute much to irregular action of the uterus—the contraction of some portions of the organ while others are in a state of relaxation, collapse, or inertia. But those who advocate this theory admit that the portion of the uterine walls which is in this state of inertia is the seat of the commencement of inversion. No one, scarcely, who knows anything about the different stages of this displacement will claim that the commencement of the process is in the spot actively contracted. As the uterine fibres must be lengthened when depression occurs, and contraction shortens them, it seems to follow, as a matter of course, that the uterus cannot be contracted at the same time it descends and changes shape. And, moreover, the attachment of the placenta to some part of the internal surface of the *fundus uteri* is found to be so general in cases of inversion, that it may be regarded as almost essential to its production. In all probability several causes and circumstances must combine to produce the accident, such as have been already pointed out.

I am willing, however, to admit that in rare and exceptional cases inversion may be what is called *spontaneous;* that is, after it has once commenced it may go on to completion by the gradual organic contraction of the uterus itself. This view is sustained by several cases included in our list, already referred to under the appropriate head. Denman, many years ago, remarked that "if a disposition to an inversion be first given by the force used in pulling by the cord, it may be completed by the action of the uterus." And Dr. Crosse has observed that this distinction between the commencement of inversion and its further progress requires constantly to be kept in mind in considering what share the uterus itself has in contributing actively towards the displacement. I fully coincide with this intelligent writer in the opinion that the womb itself has no power to commence the displacement, or to cause simple depression, and I know no writer who understands the mechanism of inversion who holds to such an opinion. But when the process has once commenced, and the case goes on to what some writers call *introversion*, bringing the fundus within the grasp and influence of the unin-

verted body of the uterus, this organ will, by the natural powers called into action by its sensibility, regard the inverted part as an extraneous mass, and proceed to act upon it accordingly, endeavouring instinctively, as it were, by successive and suitable efforts of its muscular fibres, to propel it downwards, whilst the os and cervix will by consent, as in natural delivery, become dilated, a part of the uterus thus acting on the rest, and urging on the displacement till completed. Moreover, so long as the displacement progresses by descent, the abdominal expulsive efforts, recently in great activity, and readily awakened by the attending sensation of a fulness in the passage of a foreign substance requiring to be expelled, will be brought into action, and assist in the process so long as the patient is not in an insensible state. And, as Mr. Crosse remarks, where the inversion has proceeded to a certain extent, but its further progress by descent is prevented by the resistance of the parts closing the lower aperture of the pelvis, if it go on to total inversion by the remaining part of the organ rising as it inverts, this change must undoubtedly be effected by the uterus itself, and will take place in direct opposition to both *traction and nisus depressorius.* The part of the uterus which assists inversion by contraction must be that situated between the cervix and the *angle of inflexion*, which defines a circle, changing in its situation as the inversion progresses, and where the uterine walls, turning at an acute angle, cannot be capable of contracting, but must be considered in collapse.

Mr. Crosse notices especially the abdominal nisus as one of the efficient causes of inversion, assisting in every stage of the displacement, from the commencement to the external prolapse, aiding not only in the production of depression, but often being the principal power in determining the most rapid inversion. We have seen, in several of the cases quoted, that where the predisposing causes are all present, the patient delicate and relaxed, her position sitting or erect, or perhaps even recumbent, and the uterus inert, a violent expulsive effort, made when there is no uterine contraction, may expel the fœtus rapidly through a very relaxed os and vagina, and with it, or close upon it, the placenta and the uterus inverted, which may quickly descend some inches beyond the external labia. Here the abdominal nisus seems to be almost the only efficient cause, although the adherent placenta and relaxed uterus are perhaps essential to the occurrence of the accident. Baudelocque relates a case where he observed the uterine walls to be very thin, and he cautioned the patient against straining, or bearing down; but she, being deaf, mistook what was said for an encouragement to make greater efforts, which she did, and inversion followed. It is very evident that all sudden efforts in which the diaphragm and abdominal muscles are opponents, such as sneezing, coughing, &c., may not only help in causing inversion to begin, where favoring conditions are present, but are still more efficient in advancing the displacement when already commenced. We have seen in several of the cases above recorded that partial inversion, remaining

latent and unsuspected for some hours, or days perhaps, has been increased to complete collapse under efforts at defecation, coughing, &c., although, as Mr. Crosse has suggested, not unfrequently the sensation was delusive, and the real source of those sensations in the pelvis which induced expulsive efforts was the inversion already present and distending the uterine cavity or vagina. In all cases there can be no doubt whatever that the first step in the process took place at or near the time of delivery.

We have seen above that of the fifty-two cases in which the cause of inversion is assigned, thirty-eight are distinctly stated to have been cases occurring from traction on the cord, thus confirming the opinion of Ruysch, Ramsbotham, Robert Lee, Dewees, Colombat, &c. Where an inversion is first detected some days, weeks, months, or years after delivery, blame is very apt to attach to the attending physician, and the censure, implied or expressed, is, with very few exceptions, undoubtedly deserved; for, as Colombat remarks, "the most common cause of inversion consists in attempts to deliver the placenta immediately after the birth of the child, and before the womb has become contracted." (p. 176.) "Whenever this serious accident has happened," says Ramsbotham, "it may *generally* be looked upon as the consequence of improper treatment." (p. 318.) Although this writer admits, what is proved by several of our cases, that it may occur without any force having been applied to the funis.[1] It is evident that the inversion will more readily take place if the umbilical cord answer to the axis of the fundus, and even when there is no strong tendency to inversion, if the placenta be adherent, the accident may be produced mainly, perhaps exclusively, by traction on the cord. But in cases where the predisposing causes are numerous and strongly marked, and the constitution feeble and relaxed, the slightest traction on the funis may prove sufficient to commence the inversion, which will be hurried on in its progress by uterine contraction and abdominal efforts, until partial and then complete inversion is established, without any additional interference from without. Whatever tends to increase the impetus downwards in the axis of the uterine cavity, of the pelvis, or of the vagina, whether by propulsion, weight, or traction, must have its influence in increasing the displacement already begun. There is another circumstance to be taken into account, viz., that the placenta still attached to the fundus, by its bulk distending the lower part of the uterus or vagina, will, as a foreign substance, requiring to be expelled, call into action all the sympathizing powers of the frame for effecting this expulsion, and as the placenta is driven down, the fundus comes with it. The weight of the placenta has, doubtless, much to do in causing the accident.

It has been denied that too short a cord, or one twisted about the child's

[1] See Radford, in Dublin Journ. Med. Sci., vol. xii. pp. 25, 215; Rigby, Lib. of Med., vol. vi. p. 219; Barker, in Med. Gazette, London, April 5, 1844; Ruysch, Obs. Anat. Chirurg., Obs. x. p. 13; Denman, Midwifery, p. 421; Merriman, Mid.; Dewees, Midwifery, &c.

neck, can cause inversion, but we have compiled the history of several such cases; in others it caused depression, which afterwards resulted in inversion. In several cases, where there was a large pelvis and strong pains, the sudden delivery of the body of the fœtus, after expulsion of the head, resulted in inversion.

To understand clearly how irregular actions of the uterine fibres may invert the uterus, let us consider, for a moment, their arrangement. Those on the external surface form two broad fan-shaped muscular layers, spreading from the round ligaments over the fundus uteri. On the internal surface, there are three distinct sets of fibres; two of these surround the Fallopian tubes in a concentric arrangement. The third set pass circularly round the body of the uterus, and the outer fibres of the two former layers gradually pass into and intermix with those of the latter. The mass of fibres lying between the external and the internal layers have no determinate direction. Sir Charles Bell describes them as passing in a vertiginous direction from the fundus to the os uteri. No muscular fibres exist around the os. In regard to their normal action, the *external* muscular layer slowly contracts for some time before labour commences, and draws the uterus gradually down towards the pelvis, and keeping the fundus in a perpendicular position, and proper direction. This organic contraction is unattended with pain. In regard to the *internal* muscular fibres, when those surrounding the Fallopian tubes contract together, the fundus will be equally diminished on all sides, and this combined effect on the os uteri through the liquor amnii is, to dilate it equally in all directions; and when the circular fibres of the body and cervix contract, the uterus becomes more cylindrical, at the same time they close in the cervix. It is evident that if the uterine contents were removed, the simultaneous action of all these different sets of fibres would be to draw the uterine walls equally towards the centre of the cavity. The fundal muscles, then, chiefly effect the dilatation of the os uteri and the expulsion of the child, this joint action being in the direction of the os, through the liquor amnii. It is worthy of note that no circular fibres at the os have been detected; neither Hunter nor Sir Charles Bell could succeed in discovering any. The manner in which the os dilates, also, is opposed to the theory of their existence; for its expansion is generally very gradual, yielding slowly to the force applied, and not contracting rapidly and relaxing like a sphincter muscle. Besides, it appears, on minute inspection, to be composed of a firm, highly condensed tissue, which undergoes a gradual vital process of preparatory softening, as well as mechanical dilatation, during labour. Its occasional sudden relaxation in cases of rapid labour, no more proves its muscularity, than the sudden yielding of the perineum proves its muscular structure. In regard to the order observed by the uterus in the contractions which take place, a diversity of views has prevailed. But fortunately this is a point which we are able to ascertain experimentally, for in passing the hand into

the uterus, after delivery, to remove the placenta, on withdrawing it, we feel the fundus contracting, and as it is drawn still lower, the contractions continue from above downwards, and even where we introduce the finger to irritate the os, and in an attempt perhaps to dilate it, it is the fundus and not the os uteri which immediately contracts. This, then, is the normal mode of contraction in ordinary labour, and where everything goes on naturally. But we know that abnormal or irregular uterine contractions do sometimes occur, as in hour-glass contractions, &c., and it is proper to inquire, what they are, and under what circumstances they occur. It is not very unusual to find the placenta retained from irregular contraction of the uterine fibres; one of the fundal muscles perhaps contracting and not the other, or the fibres of the body of the uterus may draw it into a cylindrical shape, and leave the fundus relaxed; or, even, there may be a spasmodic contraction of the fibres of the cervix, forming a kind of stricture. These and other similar irregular contractions may be caused by a too rapid delivery, or the fundus may remain relaxed from deficient irritation, the child being withdrawn rapidly, or the muscles of the fundus may be contracted by frictions over the hypochondriac region to excite uterine action. In this case, a cup-like depression in the centre or on one side of the fundus may sometimes be observed, by careful examination with the hand. Irregular uterine contractions are, also, sometimes owing to coagula in the uterine cavity. Can such abnormal action of the uterine fibres cause, in any case, inversion of the organ? If the placenta be adherent, as happens in a great majority of cases of this accident, and we pull even slightly on the cord, for the purpose of ascertaining whether or not it is separated, there is great danger that irregular contraction may take place, and even frictions over the fundus in the hypogastric region, may cause the same result; the anterior portions of the uterine walls may contract, while the posterior, where the placenta is commonly attached, may remain relaxed, and the middle and lower part of the womb, with the cervix, may remain in the same relaxed condition. This irregular contraction is doubtless of very frequent occurrence under such circumstances, and although it generally rectifies itself, yet by grasping the uterus in the hand, or pressure on the hypochondrium, to produce general contraction of the organ, there is danger of its merging into partial, which may go on to general inversion. By careful examination in such cases, a cup-like depression may be found at the fundus, or on one of its sides, while the greater part of the organ is wholly relaxed, and if nothing be done to restore uniformity of contraction, it would be very apt to terminate in inversion. If the placenta become detached, and the irregular contractions continue, the fundus will continue to descend, while the placenta, acting as a foreign body, or as the fœtus, with the liquor amnii, stimulates to further action, mechanically distending the cervix, and in a few hours, perhaps a single hour, or sooner, the uterus is completely inverted. It is impossible, of course, to say, how long this

process of involution will continue, before complete inversion takes place; the probability is, judging from the history of reported cases, that it generally occurs within a short time, in a majority within a few hours, and that it is very rarely protracted beyond the second day. Our statistics show, that in nearly all cases, the inversion is effected at the very time the after-birth descends, we do not say separated, but protruded into or beyond the vagina. The placenta, it is true, may be extracted, and the partial inversion go on, in consequence of continued irregular contractions, the inverted fundus, acting as a placenta or any other foreign body to stimulate to still further contraction, till complete inversion be brought about. These, however, we repeat, are rare and exceptional cases. When they do occur, they argue great want of care and proper management on the part of the practitioner. The peculiar circumstances of the case should lead the accoucheur to suspect irregular contractions, and of course, lead to inquiry and examination into its existence, and if not too late, for the employment of precautionary measures, to the prompt and energetic use of means calculated to remove it.

The opinion has been recently advanced, that in some cases of inversion of the uterus, the change does not take place according to the order above described, as commencing at the fundus by indentation and depression, and this portion of the organ passing successively through the body, neck, and mouth; but, on the contrary, may commence at the neck, this part being first forced through the mouth, the remainder of the organ following. No one, I believe, claims that such a process of involution ever has been observed; it is simply inferred from the circumstances under which some inversions take place. It may well be doubted, however, whether there are any circumstances which give any plausibility whatever to such an hypothesis. It is acknowledged by those who maintain this theory, that most inversions take place in connection with, or immediately subsequent to, the removal or expulsion of the afterbirth, and next in order of frequency are the cases occurring soon after delivery. They admit that the accident generally happens unexpectedly and suddenly, taking the practitioner by surprise, and allowing him no opportunity to watch the steps of the process; and in regard to those cases which occur half an hour, an hour, or a day or two after delivery, it is conceded that they were favoured by relaxation of the organ after it had been duly contracted. If the process of involution commenced at the fundus, a depression would exist, and, if so, it is taken for granted that it would be discovered by the practitioner, who is supposed always to examine with a view of ascertaining whether such cup-like depression exist or not. But this will depend very much on the thickness of the abdominal parietes, and the degree of depression, as well as on the care bestowed in the examination to test such change if existing. It is to be presumed, however, if the practitioner's attention is not specially called to this point by the particular circumstances of the case, if present,

it would most likely escape his observation. Indeed, so rarely is it observed, that the supporter of this theory asserts that he had never met with any such depression in his extensive obstetric practice of more than fifty years, and that he had never heard a practitioner say that he had noticed such a phenomenon, and, moreover, that he had not the slightest apprehension that he had ever overlooked it. We must, however, be allowed to express the opinion, that as the practitioner usually lays his hand over the uterine region to ascertain whether the organ has contracted or not, he would not be likely to detect slight, or even a considerable degree of depression of the fundus, even if it existed. If it be asserted that the assigned manner of uterine inversion, beginning at the fundus, is "simply an inference drawn from facts positively ascertained in but few cases," it may be replied, that a theory founded on a few positive facts, should outweigh an hypothesis unsupported by any facts whatever. It is assumed, moreover, that in cases of complete atony or exhaustion of the uterus from severe labour, copious flooding, or any other cause, "it becomes soft and pliable as a wet ox-bladder, the blood flowing off, and there being nothing to prevent the uterine surfaces from collapsing upon one another, if any pressure from above is brought to bear upon it, it will be crushed into an irregularly folded mass, which must emerge from its narrower mouth in an order commencing immediately above the neck." Fortunately we have several cases on record which have a bearing on this point. Prof. Dewees, in his Midwifery, remarks as follows: "We find mention of a case of inversion by Dr. Loffler, in which the fundus of the uterus could not be retained after reposition, *owing to the loss of the tonic power of this organ, but again and again descended through the os uteri.* The fundus uteri having receded through the orifice of the uterus, I pursued it with my hand, which I kept in the uterus, waiting for the contraction of this organ. But after I had continued in this position about half an hour, without perceiving any contraction, I was obliged to withdraw my hand, when the fundus immediately descended, but was prevented passing through the orifice." (*Loc. cit.*, p. 472.) (See Case No. 57.) We might quote several similar cases, all going to prove that in cases of relaxation of the uterus, the whole organ being passive, it is the fundus which invariably descends first through the os, and not the cervix. It is believed there is not a case on record where the latter phenomenon has been observed. It is far safer to reason from facts positively known, than to assume data, resting solely on assumption. It is, moreover, extremely improbable that the impulsive force generally brought to bear in such cases would be adequate in such a complete atony of the womb as is supposed, to force the whole organ through the neck in the order presumed.

Another theory recently broached on this subject seems no less improbable, and is equally unsupported by any known facts. It assumes that there are two sets of uterine fibres, the longitudinal and the circular; that the

circular fibres encircle the os, and form a kind of sphincter muscle of the womb, to which the longitudinal muscles are attached, and that when the circular fibres are relaxed, the longitudinal ones, which represent so many columns resting on this circular band, as a foundation, contract, and having no support, they begin to yield from the bottom, evolution takes place, the neck doubles in upon itself, and passes through the os, the body follows, and finally the fundus, dragged down upon the body, pursues the same course till complete inversion is the result. This theory only differs from the last in one particular, viz: it supposes the inversion to be owing to active contraction of the muscular fibres beginning at the os, while the former assumes that the womb is wholly relaxed, and that the displacement is wholly due to its passive condition. As this hypothesis rests on no observed facts, is totally opposed to everything known regarding the accident, and as it assumes the existence of muscular fibres around the os, where they do not exist, it may be dismissed as unworthy any serious attempt at refutation.

ART. II.—*Experimental Researches relative to a supposed New Species of Upas.* By WILLIAM A. HAMMOND, M. D., Professor of Anatomy and Physiology in the University of Maryland.

AMONG the most deadly poisons which the ingenuity of man has devised for purposes of destruction, must be placed the two well-known species of upas employed by the natives of the Indian Archipelago. Whilst woorara, corroval, and vao are used by the aborigines of a portion of the western continent as death-dealing agents, the Javan possesses poisonous compounds, scarcely, if at all, inferior in virulence to those mentioned, and around which, for a long period, hung as much mystery as was ever attached to their American analogues.

In bringing to notice in the present memoir, what, for several reasons (which will hereafter be made apparent), I am disposed to regard as a new variety of upas, it may not be uninteresting or unprofitable to recapitulate briefly the progress and present state of our knowledge relative to the history, chemistry and physiology of the species of East Indian arrow-poisons hitherto described.

An arrow-poison in use among the natives of Macassar is mentioned by Sir Thomas Herbert,[1] whose work is the earliest on the subject to which I have been able to refer. According to Bennett,[2] it is mentioned by De Bry,[3] in a work published some years previously to that of Herbert.

[1] Relation of some Yeares Travaille, London, 1634, p. 199.
[2] Horsfield's Plantæ Javanicæ Rariores, p. 53.
[3] India Orientalis, Pars 8, p. 81.

Herport[1] and Saar[2] are also quoted by Bennett, as having written upon the subject in the years 1669 and 1672, and as stating that human ordure, taken internally, is an antidote to the effects of the poison in question. That some such idea as this was prevalent in Europe at the time, we are led to believe from the fact that the following question formed one of several on the subject proposed by the Royal Society,[3] for Suratte and other parts of the East Indies. "Whether it be true that the onely antidote hitherto knowne against the famous and fatal Macassar poison, is humane ordure taken inwardly, and what substance this poison is made of?"

Tavernier[4] also mentions this poison; speaking of the inhabitants of Macassar, he says:—

"These islanders are in the habit of poisoning their arms, and the most dangerous poison they employ is the juice of certain trees which grow on the island of Borneo, which they modify according to the effect, either rapid or slow, which they desire to produce. It is said that the king alone knows the secret of lessening the activity of this substance, and that he boasts of possessing some poison so powerful that there is no antidote in the world to its virulence. One of my brothers whom I had taken with me to the Indies, and who died there, was witness of a remarkable proof of the promptitude with which this poison produces its effects. An Englishman having, in the heat of passion, killed one of the subjects of the king of Macassar, and the prince having pardoned him, all the French, English, Dutch and Portuguese, who were then at Macassar, fearing that if the murderer remained unpunished, the natives would be revenged on them, prayed the king to inflict death upon the Englishman, to which he at length consented. The death of the Englishman having been agreed upon, the king said to my brother that he would not let him languish, and that, to demonstrate at the same time the extraordinary strength of his poison, he would himself shoot the prisoner with one of his arrows. These are little poisoned arrows which are shot from a blow-gun, and the king, to show at the same time his skill, asked my brother in what part of the body he wished him to shoot the criminal. My brother, who was very desirous of ascertaining whether that which the king had said relative to the prompt action of the poison were true or not, desired him to shoot the prisoner in the great toe of his right foot, which the king did with wonderful address. Two surgeons, one English and the other Dutch, were present to cut off the toe above the wound, but they could not do it so quickly, but that the poison more prompt had reached the heart, and the Englishman died at the same time.[5] All the kings and princes of the east seek with great care for the strongest poisons, and the king of Achen one day made Mr. Cook, Envoy of the General of Batavia, a present of fifteen or twenty of these poisoned arrows. He had possessed them for some years without making trial of them; but being one day with him, he shot several squirrels with them, all of which fell dead as soon as struck."

Cleyer[6] furnishes some information on the subject, which he obtained from

[1] Kurtze Oest Indianische Reise Beschreibung, 1669, p. 26.

[2] Oest Indianishe Funfzehn Jahrigr Kriegsdienste, pp. 46–47.

[3] Philosophical Transactions, vol. i. 1666, p. 417.

[4] Les six Voyages de Jean Baptiste Tavernier, etc. Paris, 1676, seconde partie, p. 438.

[5] The similarity of the incidents of the above relation, with those told by Fermin, as occurring with the woorara of Guiana, is so striking, as to lead to the supposition that this writer derived the materials of his account from Tavernier's story.

De Telis deleteriô venenô infectis in Macassar et aliis Regnis Insulæ Celebes, etc., Miscellanea Curiosa Academiæ Naturæ Curiosum. Norimbergæ, 1699. Decuriæ ii. Ann. ter. 1684, p. 127 et seq.

the diary of Cornelius Spielman, Commander of the Dutch East India possessions.

According to this writer, there is no antidote to the poison used by the natives of Macassar, if it be recent. He, however, states the best remedy to be human excrement taken internally till vomiting be produced. He also states that the land in the vicinity of the trees from which the poison is derived is entirely barren, and that no plant of any kind is able to grow on it. The collectors of the poison use long bamboo rods with sharp points for the purpose of piercing the trees, and thus obtaining it without bringing it in contact with their bodies. The poison hardens in the canes, and is subsequently softened with water, in which an herb called *lampogang* has been infused.

Gervaise[1] asserts that the poisoned arrows retain their activity for twenty years, but that exposing them to smoke destroys their toxic power. He also declares that the action of these arrows is so rapid that death ensues immediately, and before any antidotes can be employed.

Among the plants sent from Luzoni by Father Kamel,[2] was a specimen of the tree from which the poison in question was asserted to be prepared. According to the description given, the Ipo or Hypo is of medium size, with small leaves, and of so virulent a character, that every living being coming under its shade dies, and that hence for some distance around each tree the bones of men and animals are found. The assertion of previous authors is repeated relative to the efficacy of human excrement as an antidote.

Rumphius[3] gives a long description of the tree, accompanied by several figures, together with a detailed account of the poison, its action, &c. He describes the tree under the name of *arbor toxicaria ipo*, giving the name upas as a synonym. This tree, he asserts, grows in Celebes, Sumatra, Borneo, and Bali. Most of the information he furnishes in regard to it and its poison was obtained from the natives, and, as is usual in such cases, is distorted by statements wholly devoid of truth.

Foersch,[4] in the latter part of the eighteenth century, gave circulation to the grossest falsehoods relative to the upas. Many authorities might be quoted, whose chief object seems to have been the denial of Foersch's statements, and the institution of others fully as questionable. I shall, however, pass them all over, and at once refer to writers whose accounts possess more truth than fiction.

The first writer who investigated the subject in a truly scientific spirit, was M. Leschenault.[5] Up to his researches, the two species of upas had

[1] Description Historique du Royaume de Macassar, Paris, 1688, p. 45.

[2] Ray's Historia Plantarum, London, 1704, tome iii. appendix, p. 87.

[3] Herbarium Amboinense, tom. ii. liber iii. p. 263.

[4] London Magazine, December, 1783, p. 511.

[5] Mémoire sur le strychnos tieute et l'antiaris toxicaria. Annales du Museum d'Histoire Naturelle, tome xvi. 1810, p. 459.

not been distinguished, either by origin or by their effects when introduced into the circulation of animals. A chemical analysis had not even been thought of. Leschenault showed conclusively that two species of poison differing essentially in composition and effects, were used by the natives of the Eastern Archipelago. With these they charge little arrows of bamboo, which are shot from blow-guns. The flesh of animals killed with these arrows, possesses no injurious quality, it being only necessary to remove the parts in immediate contact with the poison. One of these poisons is called upas antiar, the other upas tieute. This last is more violent in its action and is less known, as the Indians make a secret of its preparation, which is more complicated than that of the upas antiar.

According to Leschenault the upas tieute is prepared in the following manner: The bark of the root of a creeper, called by the natives tieuté, is boiled in water till a saturated infusion is obtained. This is reduced by continued evaporation to the consistence of a thick syrup. When this point is attained, two onions, a clove of garlic, a large pinch of pepper, two small pieces of the root of the *Kæmpheria gallenga*, three small pieces of ginger, and a single grain of *capsicum fructicosum* are added. This mixture being made, it is left for a short time longer on the fire and allowed to become clear. Three pounds of bark give about four ounces of extract. Leschenault charged two arrows with it, and after allowing them to become dry, pricked two chickens with them. One died in about a minute in violent convulsions, the other in a similar manner at the end of two minutes. Other animals were also killed with it, and MM. Delille and Magendie found that it had not lost its power at the end of four years. These experimenters also ascertained that the upas tieuté acts through the bloodvessels and absorbents upon the spinal cord, causing tetanus, asphyxia, and death.

The upas antiar, according to the same author, is prepared with the gum-resin which flows from the trunk of a very large tree, from incisions made for the purpose. The poison is made in an earthen vessel, without the aid of heat. To the gum-resin are added a few grains of capsicum, some pepper, garlic, and the roots of *Kæmpheria gallenga*, *maranta malaccensis*, and *costus arabicus*. Each one of these substances is bruised and gradually added, with the exception of the grains of capsicum, which are one by one rapidly thrust to the bottom of the vessel by means of a little wooden spit. Each grain occasions a slight action in the liquid, and rises to the surface. It is then withdrawn and others added, to the number of eight or ten, when the preparation is finished.[1]

[1] I am indebted to my friend, Dr. Joseph Carson, Professor of Materia Medica in the University of Pennsylvania, for the following botanical description of the plants yielding the two species of upas:—

"*Strychnos tieute*, Leschenault. *Gen. Char.*—Calix 45 parted; corolla tubular, with a spreading 4–5 cleft limb and a valvate æstivation; stamens 4–5, inserted

The effects of the upas antiar are not so violent as those produced by the upas tieute, and Leschenault has clearly pointed out the difference. A small water-fowl which he inoculated with it died in three minutes, having had no convulsion till the instant of expiration, whereas with the upas tieute strong tetanic convulsions were always produced. Magendie and Delille also demonstrated by the difference in their physiological effects the non-identity of the two poisons.

Brodie's[1] experiments with the upas antiar are of great interest. He found that when introduced into the circulation of animals, vomiting ensued, the heart beat feebly and irregularly, and there was great languor. Respiration, however, was perfect, and the cerebral functions were not disturbed. On opening the thorax before respiration had failed, the heart

into the throat of the corolla, which is either naked or bearded. Ovary 2-celled, with indefinite ovules attached to a central placenta; style 1; stigma capitate. Berry corticated, 1-celled, many-seeded, or by abortion 1-seeded; seeds nidulant, discoidal, albumen large, cartilaginous, almost divided into two plates, embryo with leafy cotyledons. Lindley.

"*Specif. Char.*—A large climbing shrub, with a thick woody root, 1–2 inches in diameter, and extending far under ground horizontally. Stem as much as 80–120 feet long, twining itself around the loftiest trees. The branches diverge at the extremity of the ramifications, and are opposite on the stem, being twisted and leafy. The leaves are opposite, oval, lanceolate, 3 nerved, entire, accuminated and glabrous. Hooks solitary opposite the leaves, thickest at the points; cymes oscillary, lax; corolla ⅔ths of an inch long, funnel-shaped, greenish-white, with the smell of jasmine. Fruit the size of a middling apple, each placed on a short thick flexicose peduncle, which is thickest at the point, globose, smooth, shining, at first brownish-yellow, afterwards bright pink.

"*Antiaris toxicaria*—Leschenault. This plant was placed by Lindley, in his Flora Medica, in the family uricaceæ; its alliances have subsequently appeared such as to warrant its removal to artocarpaceæ, a family which singularly enough alongside of this venomous plant embraces the edible bread-fruit. Its poisonous qualities still are allied to those of several species pertaining to the first named order.

"*Gen. Char.*—Monœcious, male flowers, on a convex fleshy receptable, scaly on the under side, and there attached by a stalk in the middle. Sepals 3–4, imbricated. Anthers 3–4, nearly sessile. Female flowers solitary, on a scaly peduncle. Calix none. Ovary 1-celled; ovule inverted, style 2-parted. Fruit a fleshy 1-seeded drupe. Embryo inverted, without albumen. Lindley, Flora Medica.

"*Spec. Char.*—A large sized tree, with a trunk marked by prominent excrescences. The leaves are alternate, oval, oblong, and either obtuse or pointed, unequally caudate, coriaceous, when young toothletted, petiolate and hairy. The male flowers are united in a common hemispherical, pedunculated and axillary fungus-like receptacle. They are green, downy, and separated by numerous imbricated scales. Female flowers are solitary, and almost sessile at the axilla of the leaves. Numerous imbricate scales cover the ovary, which is surmounted by two stigmata."

[1] Philosophical Transactions, Part I., 1811, p. 198.

was found to have ceased contracting, and was gorged with blood. From his investigations he concludes that:—

"The upas antiar, when introduced into a wound, produces death by rendering the heart insensible to the stimulus of the blood, and stopping the circulation. The heart beats feebly and irregularly before either the functions of the mind or the respiration appear to be affected. Respiration is performed even after the circulation has ceased, and the left side of the heart is found after death to contain scarlet blood, which never can be the case when the cause of death is the cessation of the functions of the brain or lungs."

Horsfield[1] has given a full account of these poisons, and performed many experiments with them. His account of the methods used in the manufacture of the antiar and tieute does not differ essentially from Leschenault's relation, and need not therefore be further considered. Horsfield performed two series of experiments; the first, with the antiar, were instituted upon numerous mammals and birds. The symptoms observed were, in general, vomiting, convulsions, evacuation of feces, and death, in periods varying from a few minutes to several hours. The experiments of the second series were performed with the tieute upon mammals and birds. This poison was found to be much more virulent than the antiar. It produced convulsive twitchings, rigidity of the muscles, great exhaustion, and death. From post-mortem examinations, he concluded that the action of the antiar is directed to the viscera of the thorax and abdomen, and that of the tieute to the brain and dura mater.

It cannot be said that Horsfield's experiments are such as to throw much light upon the physiological action of these substances. He, however, gives some interesting details relative to the plants from which they are obtained. From these it appears that the antiar or anchar is one of the largest trees of the Archipelago, rising to the height of sixty or eighty feet before sending off a branch. It proves hurtful to no plant around it, and creepers and parasitical plants wind around it in great profusion. The poison is situated in the bark, from which, when cut, it flows in the form of a milky sap. In this state it is as deleterious as when mixed with extraneous substances, as black pepper, ginger, &c. When applied to the skin it produces intolerable pain and itching with a kind of herpetic eruption.

The tieute chetik or tschetic, according to the same author, is only found in Java.

Blume[2] states that the antiaris toxicaria grows not only in Java, but also in the neighbouring islands, and in most of the groups of the Indian Ocean. By the inhabitants it is called ipo, hypo, or upas, words which, in the different Malay dialects, signify poison, and which are also applied to the strychnos tieute or bohon upas (poison tree). In Java it is specially designated by the names antchar, antzchar, or antjar.

[1] Thomsons's Annals of Philosophy, vol. ix. 1817, pp. 202, 265.

[2] Rhumphia, t. i. p. 36 *et seq.* See also tab. 22 and 23.

Blume also states that the poison is of a volatile nature, and that the deleterious principle is lost unless it is carefully preserved from contact with the atmosphere.

According to the same author, the antiar does not act with equal promptness on all animals, dogs, for example, being less affected by it than monkeys, cats, or bats. Certain birds die almost at the instant of inoculation, whilst chickens are but slightly affected. It is less active when introduced into the stomach than when injected directly into the circulation, and in the former case induces vomiting. It is further asserted that emetics are the best antidote.

The chemical examination of the tieute and the antiar instituted by MM. Pelletier and Caventou,[1] gave results of considerable importance. From the investigations of these chemists it is conclusively shown that the active principle of the upas tieute is strychnia united to an acid, probably the igasuric, whilst the upas antiar contains a bitter matter, soluble in alcohol and in water, and possessing the same toxical properties (though in much greater degree), as the antiar in substance. To this principle the name of *antiarin* is given.

Mulder[2] has also analyzed the antiar. A specimen brought to him from Java by Blume he found to possess the following constitution :—

Vegetable albumen	16.14
Gum	12.34
Resin	20.93
Myricin	7 02
Antiarin	3.56
Sugar	6.31
Extractive	33.70

Antiarin can be obtained by boiling the upas antiar in alcohol. On cooling, the antiarin crystallizes in silvery inodorous leaflets of mother-of-pearl lustre, which are soluble in 250 parts water, 70 parts alcohol, and in 2792 parts ether, melt at 220 C., and are not volatile.

No investigations of any importance were instituted subsequently to the foregoing with either species of upas, till a short time since Prof. Kölliker[3] communicated the results of some initiatory researches relative to the physiological action of the upas antiar.

The specimens of the poison employed by Kölliker were obtained from Drs. Christison and Horsfield, and originally came from Borneo and Java. That from the latter locality, though collected in the beginning of the present century, was found to possess its full toxical power.

[1] Examen Chimique des Upas, Annales de Chimie et de Physique, t. xxvi. p. 44.

[2] Traité de Chimie de Berzelius, t. iii. p. 869.

[3] Einige Bemerkungen über die Wirkung des Upas Antiar, Verhandlungen der Würtzburger Phys. Med. Gesellschaft, Bande viii. 1857. See also Proceedings of the Royal Society, December, 1857.

The symptoms which followed the introduction of the antiar into the circulation of frogs were as follows:—

In the first place, the voluntary movements became less energetic, and at length entirely ceased, in an average period of from 30 to 40 minutes after the inoculation. Reflex movements could be excited for a short time subsequently, but they were soon lost (in from 50 to 60 minutes from the commencement), and the animals died without the least trace of convulsion or tetanic spasm. Upon opening the frogs it was invariably found that the heart had ceased to beat. The auricles were dilated; the ventricle contracted, corrugated, and generally red, as if blood had been extravasated into its tissue. The other organs, especially the lungs, liver, stomach, intestines, and kidneys, were found in an hyperæmic condition. The excitability of the nerves was still present, but in slight degree, and was generally abolished in the second hour after the introduction of the poison. The irritability of the muscles to galvanism was lost a short time after that of the nerves. The *rigor mortis* commenced in the sixth hour, and was generally well established at the eighteenth hour.

It was definitely ascertained from these experiments, that the heart of frogs inoculated with antiar ceases to beat in from 5 to 10 minutes, and that the ventricle ceases acting before the auricles. The first action of the antiar is therefore to paralyze the heart. By further investigation, Kölliker ascertained that the abolition of voluntary and reflex movements was entirely due to the stoppage of the heart's action, for by cutting out the heart or putting a ligature around the base of it, as had been previously done by other observers, it was found that the voluntary movements ceased in from 30 to 60 minutes, and the reflex actions in from 1 to 2 hours. The irritability of the nerves and muscles was not thus abolished, consequently the antiar exercised a direct action on these organs.

From a third series of experiments Kölliker arrived at the conclusion, that the voluntary muscles are paralyzed next after the heart, and the nervous trunks some time subsequently. The antiar, therefore, unlike the ordinary woorara, acts principally upon the muscular system, and in confirmation of this conclusion, it was found that the muscles and heart of frogs poisoned with this latter substance lost their irritability in a short time if antiar was introduced into a wound some time after the woorara.

As the results of his researches, Kölliker deduces the following conclusions:—

"1. The antiar is a paralyzing poison.

"2. It paralyzes in the first instance the heart, acting with great rapidity upon this organ.

"3. The speedy disappearance of voluntary and reflex movements is a direct consequence of the paralysis of the heart, at least the same results ensue upon extirpation or ligature of this organ.

"4. The antiar in the second instance paralyzes the voluntary muscles.

"5. In the third place, it subsequently paralyzes the great nervous trunks.

"6. In frogs poisoned with woorara the antiar exerts its peculiar effect upon the heart and voluntary muscles.

"7. From the foregoing it would appear that the antiar is principally a poison to the muscles."[1]

[1] The great similarity existing between the action of the antiar, as above described by Kölliker, and that of corroval and vao, is very striking. See a paper on these latter poisons, by Dr. S. Weir Mitchell, of Philadelphia, and myself, entitled

The researches of Pelikan,[1] relative to the action of the antiar, tend to the same general conclusions as those of Kölliker, and from the investigations of this observer it would appear that the alcoholic extract of the leaves and stalks of the *Tanghinia venenifera* produces analogous results. The main fact derived from his experiments being that both these poisons act directly upon the heart, arresting the action of this organ, but causing no tetanic spasms.

From the various examinations heretofore instituted, it would appear, therefore, to be definitely settled that the upas tieute causes tetanoid convulsions, but does not act primarily upon the heart, its action being in many respects similar to that of strychnia, which substance enters into its composition, whilst the upas antiar, like corroval, vao, and tanghinia, causes death by directly arresting the motions of the heart, but inducing no tetanic convulsions. The following investigations will show how very complicated is the action of the upas in my possession, and how essentially it differs from any other poison hitherto described.

The upas used in the ensuing experiments was obtained in 1848, by Dr. W. S. W. Ruschenberger, of the United States Navy, at Singapore. He knows nothing of its history before it came into his possession. I must express my sincere appreciation of his kindness in placing it at my disposal.

When the poison in question was given to me it was contained in a small vial, tightly corked and sealed, which had not been opened since it was procured. The contents were of semifluid consistence, of a dirty green colour with a slight yellowish tinge, and evolved a very decided odour of human feces. A slight sediment which had been deposited consisted of amorphous organic matter, with a few vegetable cells and other structures of similar character.

Desirous, in the first place, of ascertaining its physiological effects upon the animal organism, I was unable, from the small quantity in my possession, to subject it to so thorough a chemical examination as I desired. My investigations in this latter direction were therefore limited to one point—the determination of the presence or absence of strychnia.

For this purpose I proceeded according to the method of M. Stas for the detection of the alkaloids.

Twenty grains of the poison were diluted with about a drachm of water. A few minims of alcohol and five minims of acetic acid were next added, and the mixture digested in the water-bath for an hour and a half, being frequently stirred. The mixture was then filtered, and the residue washed with dilute alcohol till all soluble matter was extracted. The liquid was then evaporated nearly to dryness in the water-bath, and the residue treated with

"Experimental Researches relative to Corroval and Vao, two new varieties of Woorara, the South American Arrow-Poison," American Journal of the Medical Sciences, July, 1859. At the time these investigations were made we had not seen Prof. Kölliker's observations on the antiar.

[1] Beiträge zür gerichtlichen Medizin, &c., 1858, pp. 164–169.

boiling alcohol and filtered. The alcoholic solution was again evaporated, and the residue digested with a small quantity of distilled water. The solution was filtered, and potash added till the reaction became alkaline. The mixture was then shaken in a stoppered test-tube with twice its volume of rectified ether. The ethereal solution was then decanted, and allowed to evaporate spontaneously.

In this manner 4.75 grains, equal to 23.75 per cent., of a substance possessing an intensely bitter taste, but uncrystallizable, were obtained. Tested with bichromate of potash and sulphuric acid, a deep blue colour was produced, but this was not succeeded by the characteristic play of colours which strychnia produces; and although less than the fourth of a grain caused violent tetanic spasms and death in a large frog, I suspected that the substance obtained was not pure strychnia. I therefore treated it with pure distilled water, and found that to a considerable extent it was soluble in this menstruum. Of 4 grains thus acted upon, the residue amounted to 2.87 grains. This was crystallizable, as strychnia, and exhibited with bichromate of potash and sulphuric acid the same reactions as this substance. It also caused tetanus and death in a frog, when inserted in very minute quantity under the skin. The aqueous solution last obtained was preserved. It will be again referred to when the physiological experiments are detailed.

My impression from the results of this examination, and from the few experiments performed, was that the poisonous substance was the upas tieute. The place whence it was obtained, and the fact that it contained strychnia, were, I thought, sufficient to establish its identity. The more thorough physiological examination instituted, which I now proceed to detail, convinced me of my error.

In order to facilitate the introduction of the poison into the circulation of animals, twenty grains were diluted with two fluidrachms of distilled water, a few drops of alcohol being added to insure against decomposition. This was the strength always employed, unless otherwise stated.

The more obvious effects of the poison are shown in the following experiments:—

Exp. Ten drops of the diluted poison were inserted under the skin of a large cat. During the first two minutes no symptom worthy of note was observed. Then slight twitchings of the muscles of the back were perceived, and immediately afterwards the animal vomited. At the end of four and a half minutes the cat fell, and was tetanically convulsed. Death ensued immediately, in the midst of violent and general tetanic spasms. Circumstances prevented me making any further examinations in this case, and it is only adduced as being among the first of the series of experiments, and as showing with what great power the poison acted.

Taking, however, into consideration the results of the chemical examination, and the extreme rapidity with which death followed the first convulsions in the experiment just cited, I was strongly of the opinion that some other cause than tetanus was active in producing the ultimate result. I therefore proceeded as follows:—

Exp. Three drops of the poison were inserted under the skin of the back of a large frog, and the chest immediately laid open, in order to observe the action of the heart. At the time, this organ pulsated fifty times per minute, and with great regularity. After the fourth minute the movements became more irregular,

the ventricle contracted to less than half its normal size, lost its deep colour, and finally ceased to beat, five minutes after the inoculation. The auricles stopped beating a few seconds subsequently. The frog, however, was still possessed of a good deal of muscular vigor, and was able to leap several feet. The animal was placed under a bell-glass, and carefully observed. Seven minutes after the movements of the heart were arrested there were slight convulsive actions of the abdominal muscles, and in less than a minute afterwards the frog was in violent tetanic spasms. These were excited by the least irritation. They continued for nearly half an hour with undiminished violence, and then gradually ceased. Fifty-five minutes after the inoculation the animal was dead to all excitation.

Exp. Ten drops of the poison were introduced under the skin of a medium-sized cat. At the end of seven and a half minutes the animal had a slight spasm and vomited. In two minutes afterwards it fell, with general tetanic convulsions, and expired. The chest was immediately opened, and the heart was found to have ceased acting.

These experiments were frequently repeated, and always with analogous results. They lead inevitably to the conclusion that the poison used, besides inducing tetanus, acts directly upon the heart. In fact, in frogs its first effect is to arrest the action of this organ, and it is not till some minutes have subsequently elapsed that the tetanus supervenes. It is probable that the same is the case in mammals, but, owing to the rapidity with which the poison acts in warm-blooded animals, it is difficult to arrive at a very definite conclusion on this point. The following experiment, which was several times repeated with like results, shows, at any rate, that the heart is affected before any spasms occur:—

Exp. Fifteen drops of the poison were inserted into the thigh of a small dog. The chest was immediately opened, artificial respiration being kept up by means of the apparatus described in the memoir on corroval and vao. The action of the heart was not more than ordinarily disturbed till about four minutes had elapsed. Portions of the left ventricle then became paralzyed, and the pulsations of the organ became much slower. Up to this period no convulsions had occurred; but shortly after the appearance of the phenomena above referred to, a slight tetanic spasm of the whole body took place. In less than a minute subsequently—about six minutes after the inoculation—the heart suddenly stopped, simultaneously general tetanic convulsions occurred, and the animal was dead.

It may therefore be concluded that the poison referred to in this memoir, like the upas antiar, corroval, vao, and tanghin, acts primarily upon the heart, but, unlike these agents, acts also upon the spinal cord, causing tetanic convulsions. Its action would therefore appear to be a compound of that of the two known species of upas, and it might be supposed that the poison in my possession was a simple mixture of these substances. In order to discuss this point properly, it will be necessary to return to the chemical examination made.

It will be recollected that 20 grains of the poison yielded 4.75 grains of an exceedingly bitter substance, possessing, in some respects, the characteristics of strychnia, but yet differing very materially from it in several essential particulars, and that this matter was further separated into strychnia and a substance soluble in water.

The solution of this latter ingredient, on being carefully evaporated to dryness in the water-bath, left a light yellow substance, extremely hygro-

scopic, and possessing a somewhat astringent and slightly bitter taste, the latter being probably due to traces of strychnia. It was slightly soluble in alcohol, and very much so in ether, differing, therefore, in these respects, from antiarin. It was also readily dissolved by chloroform. It was altogether uncrystallizable, another point of difference from antiarin.

In physiological properties it appeared to resemble this latter substance. A small portion, not larger than the head of a pin, arrested the action of the heart of a large frog in about four minutes. A pigeon, inoculated under the wing, fell dead in two minutes. On opening the chest, the heart was found hard and rigid. In neither case was there the least appearance of tetanic or other convulsions.

The quantity of this substance becoming exhausted, I was unable to experiment further with it. The chemical properties were certainly not those of antiarin, and therefore the idea that the poison to which this memoir relates is a mixture of the upas antiar and the upas tieute is not tenable.

We have already seen that the primary action of the poison under consideration is upon the heart, and that secondarily it acts upon the spinal cord, producing tetanus. That this last mentioned result is not a consequence of the arrest of the heart's action will be admitted by all who are familiar with the results which follow ligature or removal of this organ in frogs. In such cases there are no convulsions, the animal dying from complete abolition of all nervous action. From numerous experiments which I have performed with reference to this point, I have satisfied myself that after placing a ligature around the large vessels at the base of the heart, on extirpating the organ, the voluntary movements entirely cease in from twenty to fifty minutes, and the reflex in from one to two hours. My experiments in this respect are therefore entirely in accordance with those of Kölliker already referred to.

In an elaborate memoir lately published by MM. Martin-Magron and Buisson, it is attempted to be shown that both woorara and strychnia cause tetanus, and act upon the nervous system without the agency of the circulation.[1] It would be easy to show the numerous fallacies into which these physiologists have fallen, but such is not at present my intention. That the poison now under notice does not act but through the medium of the blood, the following experiments abundantly show:—

Exp. A ligature was placed around the base of the heart of a large frog at 1.45; at 1.47 the animal was inoculated in the left posterior extremity with five drops of the solution of upas; at 2.15 voluntary movements abolished; at 2.55 no reflex actions could be excited. Nervous and muscular irritability remained four or five hours longer. At no time was there the least appearance of spasm of any kind, though the animal was carefully observed till 9 o'clock.

Exp. The entire heart was cut out of a large frog at 4.15, and the blood

[1] Action Comparée de l'Extrait de Noix Vomique et du Curare. Journal de Physiologie de M. Brown-Séquard, numéros vii. viii. ix. 1859–60.

allowed freely to escape; at 4.18 the animal was inoculated with the poison in the left posterior extremity; at 4.53 voluntary motions were abolished; and at 5.38 reflex movements could no longer be excited. The animal was carefully observed till 11 o'clock, but no convulsions of any kind occurred.

Even if such actions had supervened, I do not think they would have afforded any proof that the poison was not conveyed to the spinal cord through the medium of the blood, for, as is well known, the capillary circulation persists in frogs with more or less activity for some time after ligation or extirpation of the heart. I have ascertained, that six hours subsequently to either of these operations a persistent current in one direction only is present in the capillaries of the web, and that oscillatory movements continue for several hours afterwards. If, therefore, a poison be applied to the spinal cord, or its membranes, or even in its vicinity, it need excite no surprise if the peculiar effects of the agent are manifested. I have frequently repeated the chief experiments of MM. Martin-Magron and Buisson, and though I have generally obtained their results, I think a different interpretation of them is required. At the same time I am not prepared to deny that poisons may act by imbibition in the manner described by the physiologists above mentioned, but so long as it can be demonstrated that the blood is in motion in the capillaries, it appears more philosophical to admit its influence in conveying the poison than to ascribe the transportation to another force. The following experiments will, I think, show that the power of imbibition is not so great as MM. Martin-Magron and Buisson contend.

Exp. A large frog was selected, and a ligature was placed around the large vessels of the lower part of the abdomen. The animal was then so arranged that both posterior extremities, as high as the middle of the legs, were kept immersed in a strong solution of the upas. At the end of an hour the chest was opened, and the heart was found to be actively pulsating. Six hours were suffered to elapse—the animal being retained in the same condition—and no symptoms of poisoning having been induced it was released. The ligature was now removed from the vessels, and in the space of three minutes the heart had ceased to beat. Tetanus supervened a few minutes subsequently.

Exp. The hind legs of a large frog were immersed in the same solution used in the foregoing experiment, and in a similar manner, except that no ligature was applied to the vessels, and that all the tissues but the vessels were entirely divided at about the middle of the thighs. The chest was then opened. The heart ceased to act in a little more than six minutes after the immersion, and after about eleven minutes had elapsed, the animal was in violent tetanic spasms.

As the objects of the present memoir relate solely to the action of the upas in my possession, it would be out of place to enter into any discussion of the investigations of MM. Martin-Magron, and Buisson, but the two experiments above cited are at least indicative of the fact that the poison used exerted its influence solely through the circulation, and the other facts stated are, I think, strongly suggestive of errors into which these observers have fallen. At some future time I purpose considering their researches more at length. I would only say further, therefore, that

the time the frogs used by these experimenters survived extirpation or ligature of the heart is altogether unprecedented, no observer, to my knowledge, ever having witnessed such lengthened vitality as that asserted by MM. Martin-Magron, and Buisson, to have attended their experiments under the above named circumstances.

In its effects upon the nervous system, the poison under consideration is peculiar. Owing to the rapidity with which tetanus supervenes, it is impossible to determine when the voluntary movements entirely cease, even in frogs and other cold-blooded animals. In mammals and birds, these actions are of course very soon lost. In regard to the reflex actions, it is hardly necessary to state that they are greatly intensified. They also are manifested for a much longer period than in animals poisoned with corroval or vao, or in which the circulation has been arrested by ligation or excision of the heart. The following experiment, which is only one of many which were performed with reference to this point, is adduced.

Exp. A large frog was inoculated with the solution of the poison under the skin of the back at 11 A. M. At 11.6 the heart stopped. The animal was capable of voluntary actions till 11.13, when tetanus of a very violent character occurred. This condition was present in all its primary intensity till 12.20, when it began to exhibit a less violent character. At 2.30 general spasms were induced by the galvanic irritation of a posterior extremity, and even at 4 o'clock, under similar excitation, there were slight reflex actions caused in the muscles of the anterior extremities.

It is extremely probable that like corroval in its relations to strychnia, the two poisonous principles of the upas are, to a certain extent, antagonistic, and I regret again that I had not sufficient of the heart-paralyzing agent to admit of my establishing this point as a certainty.

In its effects upon nervous and muscular irritability, the poison under consideration is more closely allied to strychnia than to corroval or antiar, *i. e.*, the action of the strychnia is predominant over that of the other principle, and consequently the nerves and muscles retain their excitability for a longer period than when either of the two above named substances is introduced into the circulation. Without giving the details of the experiments, I would state as the results of my investigations, that in frogs the nerves retain their irritability for about five hours, and the muscles for about an hour longer.

When taken into the stomach, the two principal actions of the poison are reversed in the order of occurrence. Tetanus first occurs, and it is not for some time afterward that the heart stops beating.

Exp. Ten drops of the solution of the poison were introduced through a tube into the stomach of a large frog at 10.20. Tetanic spasms commenced at 10.32, and at 10.40 were at their height. The chest was opened, and the heart was found to be actively pulsating. It continued to beat till 10.58, when it stopped.

Exp. Twenty-five drops of the solution were injected through a tube into the stomach of a small dog. At 12.5 the chest was opened and artificial respiration instituted. Tetanus supervened at 12.13. The heart continued acting till 12.28, when it stopped.

I found, by subsequent investigation, that it was possible to entirely prevent the paralysis of the heart by washing out the stomach a few minutes after the introduction of the poison. This is shown by the following experiment:—

Exp. Ten drops of the solution of the poison were placed in the stomach of a frog at 2.15. At 2.20, before tetanic spasms had become developed, the stomach of the animal was inverted, and thoroughly washed with tepid water. It was then returned to its normal position. During the operation, tetanus supervened. The chest of the animal was opened, and the heart was found pulsating actively. It continued beating for several hours, during the whole of which time the convulsions were excited on the least irritation.

Introduced into the rectum, the effects ensue in the same sequence as when the poison is placed in the stomach, but with somewhat greater rapidity. It may, therefore, be concluded that the mucous membrane of the alimentary canal is a better endosmometer for the solution of strychnia, than for that of the heart paralyzing agent.

Placed upon the skin of frogs, the poison produces similar effects to those which follow its insertion under the skin, and with almost as much rapidity. It is, perhaps, hardly necessary to cite any of the numerous experiments which were performed with reference to this point.

It was intended to have made these investigations much more extensive, but the limited quantity of the poison at my disposal prevented me doing as complete justice to the subject as I desired. From the researches, so far as they extend, I think it may be fairly concluded that the poisonous substance to which they relate is altogether different from any one species of poison heretofore described, and that whilst in many respects it is similar in physiological effects to both the upas antiar and the upas tieute in their joint actions, there is much reason for hesitating to regard it as a compound of these substances.

ART. III. *Aromatic Sulphuric Acid in the Treatment of Tapeworm.*

By B. DARRACH, M. D., Quincy, Ill.

TÆNIA has pre-eminently its fashionable remedies. Kousso, after being lauded as a sovereign cure, and sold at extravagant prices, has been laid aside, like many of its predecessors. Emulsion of pumpkin-seeds, I apprehend, is destined to the same fate. I have seen it fail in a case, where a year previously it had expelled twenty-four feet of the parasite, and where turpentine was subsequently used with success. Will the profession then pardon me if I bring another remedy to their notice, that it may have a trial which can alone test its value. I am indebted for the facts to my fellow-practitioner, Dr. Adams Nichols, and publish them with his concurrence.

On the 5th of February last, the doctor was called to see Mr. P——, farmer, aged about 35, native of this vicinity, and living a few miles from town. He had been suffering for three months with vague pains in different parts of his body; was debilitated and emaciated; had some cough; a slight expectoration, and obstinate constipation. When I saw him for the doctor on the 10th, he had the appearance of a phthisical patient. On Dr. Nichols' second visit the patient exhibited a discharge from his bowels, which had alarmed him; to use his own expression, "his bowels were all coming away from him." Upon inspection, the discharge was found to be a mass of tapeworm several feet in length. He was ordered aromatic sulph. acid ℥j, water Oiss; to drink of it as often as he could until he had used it all. On the third day he passed about a pint of the worm in fragments, and apparently partly digested. The dose was repeated on the fourth day as a precaution, but without expelling any more of the animal.

Feb. 24. Reported himself: bowels regular, cough gone, appetite good, gaining flesh, and no symptoms of the worm.

Since the above date he has entirely regained his flesh and strength, and has perceived no indication of a return of the parasite.

The above remedy was brought to the doctor's notice in rather a singular manner, about thirty years ago, while practising on Cape Ann, Mass. An old woman sent for him one afternoon to visit her, and greeted him on his arrival with the announcement, "Doctor, I've got a tapeworm!" The doctor not finding any very satisfactory evidence of the presence of such a creature, tried to laugh her out of the idea, and left her. A few days after he was summoned again, when she told him—"Doctor, I've killed my tapeworm, and there he is!" showing a vessel half filled with the animal. On inquiry as to what killed it, she replied—"Well, I felt him a poking his nose up into my stomach again this morning, so I took a teaspoonful of elixir of vitriol. I thought that was the sourest thing I could find, and gave it to him for his breakfast." Subsequently the doctor met with two other cases on Cape Ann, and profiting by his experience in the case of the old woman, treated them successfully with the acid, giving ℥j in several ounces of water in the course of three or four hours.

A few years ago, in this city, Mrs. M——, a feeble woman, having kept her bed for five months, and at the time very low from a recent confinement, was surprised one morning by the passage of about five feet of tapeworm. Turpentine was administered for two days, without success. The acid, which had for the time been forgotten, was then given—three teaspoonfuls in twenty-four hours, in sweetened water, when a long worm was expelled. The patient speedily regained her flesh and strength.

All of these cases, excepting the first, remained under observation for some years, without any return of the worm. In all, the discharged worm was in the same fragmentary and semi-digested state. Finally, the doctor says, the remedy has never failed with him.

QUINCY, *Ill.*, *Aug.* 10, 1860.

ART. IV.—*On Tropical Dysentery.* By RICHARD WHITTINGHAM, M. D., Surgeon Peruvian Navy.

DURING a residence of more than ten years in South America, the greater part of which time has been spent in the military and naval service of Peru, where dysentery forms one of the most important and fatal maladies, I have had many opportunities of observing the disease, and of seeing the almost total want of success which invariably attends the early attempts of the European surgeon to treat this "scourge of armies."

The official reports show that the British army has lost in its most important expeditions more men from dysentery than from the sword. During the late campaigns in the Crimea and on the peninsula of India, this disease has been very fatal among the troops, and the practice of the surgeons in charge attended with most unfortunate results.

During four years, I was in charge of the General Hospital here (in Callao), and a very great number of cases of dysentery passed under my treatment. I had been taught that dysentery was inflammation, and in its management, to place my chief reliance on the "lancet" and "calomel and opium." I was doomed to be miserably disappointed, and by dearly bought experience found that bleeding did no good—it only weakened the patient, without *telling* on the disease; and as to mercury, that it was applicable only to certain forms of the disease; while in others it did harm, or was unnecessary: and twelve months' later experience in the burning climate of the *Ecuador*, directly under the line, has only strengthened my opinion on this point; *bleeding* being borne with less impunity in *Guayaquil* than in the more temperate climate of Peru. No doubt dysentery is inflammation, but it is *specific* inflammation, and yields readily to certain *specific* remedies when properly administered.

In conversation with Dr. Rios, of Lima, a native physician of great experience, he informed me that he had learned to place his reliance on large doses of *powdered ipecacuanha* and vegetable astringents, particularly the *pomegranate* or *Granada* bark (viz: the dried rind of the fruit), in the form of decoction, and this practice, with some modifications, I adopted in the hospital.

The results of my practical experience in this disease are, that there are *five* distinct varieties of dysentery, requiring for their cure different modes of treatment:—

(1.) Dysentery dependent upon indigesta and feces retained in the bowels.

(2.) Simple *specific* dysentery, which may be subdivided into *common* and *bilious.*

(3.) Dysentery complicated with *enteritis.*

(4.) Dysentery complicated with inflammation of the *liver*, acute or chronic.

(5.) Putrid, gangrenous, or malignant dysentery.

It is of vital importance that the practitioner, when called to a case of dysentery, should make a very careful examination of the patient's abdomen, in order to ascertain which of the forms of the disease he will have to treat.

Mere tenderness over the region of the colon is almost always present more or less in simple dysentery. General tenderness of the abdomen, increased on pressure, belongs to enteric dysentery; and if the inferior lobe of the liver be found enlarged, and this viscus is tender on pressure, the case belongs to the hepatic variety.

(1.) Dysentery dependent upon indigesta and feces retained in the intestines.

Symptoms.—The characteristic symptoms of this form of the disease are, griping pains in the bowels, and a constant desire to go to stool; the evacuations being watery, mucous, or bloody and slimy, mixed with small lumps of fecal matter, called "scybala." The patient complains of a *load* in the intestines, feeling as if a ball or orange were lodged in the lower bowels. This he endeavours to throw off by violent efforts of straining, and though he feels these to be useless, he is unable to resist them. This sensation is obviously attributable to the enormously swollen state of the mucous membrane of the colon and rectum. The tongue is furred; there is some pain in the umbilical region after colic; there is *no* fever, but the heat of the skin and thirst are augmented at night; the abdomen is *hard*, but *not* tender on pressure.

Treatment.—These symptoms yield to the administration simply of full doses of purgative medicines: I prefer castor oil, and the free exhibition of copious enemas of olive oil and warm water. To this class of cases the observation of Dr. George Gregory is particularly applicable when he says, "but the employment of *purgatives* constitutes the most important part of the treatment of dysentery." They must be steadily persisted in until fecal evacuations have been procured, and the sensation of load in the bowels, which leads to the efforts of straining, is completely removed. *Then, and not till then,* may the practitioner desist from the free use of his *cathartics.* When proper fecal evacuations have been produced, it will be generally proper to continue the use of aperient medicines in smaller doses (the oil of sweet almonds, in doses of two ounces every morning, is an admirable remedy in these cases), and if after that the pain and discharge of mucus continue, the pulv. ipecac. comp. in doses of ten grains at bedtime, or twice a day, is an admirable remedy, well adapted to this stage of the disease.

(2.) Simple *specific* dysentery; which may be subdivided into *common* and *bilious.*

The *symptoms* are frequent calls to stool, with pain and tenesmus, sometimes nothing passing but mucus *streaked* with blood, and frequently large quantities of pure blood. The evacuations are attended by acute *cutting* pain across the bottom of the abdomen, over the *pubic region,* and

there is tenderness on pressure over the track of the *colon;* slight fever and much thirst; the tongue is covered with a dirty fur, and in the *bilious* cases there is nausea, often vomiting, and great prostration of strength, the edges of the tongue being yellowish.

Treatment.—I generally administer a draught composed of half a drachm to a drachm of powdered ipecacuanha, mixed in a little syrup and water; the quantity of ipecac. being increased or diminished according to the severity of the case and the strength of the patient; it should be given fasting, or early in the morning; the patient should lie in bed quiet, and not drink anything to excite vomiting. The medicine is *not* given as an *emetic,* but to produce its *specific* action on the disease. By the rectum I give half of the following enema, night and morning: ℞.—Radicis ipecacuanhæ contus. ℥j; aquæ ferventis ℔iss; fiat infusia, cola et adde syrupi morphiæ, ℥j.—M. Ft. enema. The ipecacuanha draught should be repeated every morning for three days. It generally produces but little vomiting, but the second or third dose causes copious bilious stools, which is the desired effect of the medicine. Under this treatment patients frequently pass very large quantities of vitiated matters from the bowels, and often all the dysenteric symptoms are at once relieved. By the *third* or *fourth* morning a *full* dose of castor oil should be exhibited; the quantity I give is from an ounce and a half to two ounces, mixed in the form of an emulsion; small doses of castor oil only irritate, and do more harm than good in dysentery. Should, however, the case be an urgent one from the large quantities of blood discharged by stool, and not allow time for the above treatment, I administer ten grains of ipecacuanha mixed with a grain of powdered opium, every six or eight hours, and the enema of infusion of radix ipecacuanha night and morning, till the urgent symptoms are arrested. This plan I have found to succeed much better than the acetate of lead and opium, so highly extolled by some authors in this form of the disease. Under this plan of treatment, though no blood now appears in the stools, a mucous diarrhœa, with *tenesmus,* often continues to harass the patient, and it is now that the vegetable astringents are of such infinite service. I give the Granada or pomegranate bark in the form of decoction: ℞.—Corticis granati ℥ij; aquæ ℔iss; boil to a pint and strain, and add syrup of morphia ℥j. A wineglassful to be given every four hours. The remaining symptoms will speedily diminish under the use of this medicine. The patient should, during the time he is under treatment, drink moderately of tepid rice water, with plenty of gum Arabic dissolved in it, and sweetened to his taste. In very severe cases, the only nourishment I allow is the white of an egg beat up with a teaspoonful of powdered gum Arabic, and white sugar, mixed in a teacupful of hot rice water, to be taken three times a day. The diet should be light throughout the cure. Under this plan of treatment, if the patient has been seen at all early, he is almost invariably well in a week or

ten days, and relapses are of rare occurrence when common care in the diet is observed.

(3.) Dysentery complicated with *enteritis*.

Symptoms.—In this form of the disease, in addition to the symptoms of simple dysentery, there is high fever; acute pain in the abdomen, increased on pressure; often this part is exquisitely tender; the patient lies on his back with his knees drawn up, and cannot bear the pressure of the bed-clothes. The pulse is *full* and frequent, but seldom *hard;* there is extreme thirst, and the tongue is covered with a dirty white fur; the features are anxious; the urine high coloured and scanty; and in fatal cases the fever assumes the typhoid form, and the patient sinks into a state of collapse.

Treatment.—Judging from the fever, fulness of the pulse, and, above all, the tenderness of the abdomen, which is frequently exquisite, general blood-letting would appear to be indispensable; and, indeed, these are the cases in which we are told to bleed freely, and leech abundantly; but such a treatment will not do in the tropical climate of South America, and we must always remember that in dysentery it is *specific*, and not common inflammation, we have to deal with. Indeed, so badly is bleeding borne in acute enteric dysentery here, that in one severe case, "having the fear of a lancet before my eyes," I was induced to order a dozen leeches to the abdomen; a poultice was applied to the leech-bites afterwards, and they bled freely; the next morning I found my patient in such an alarming state of collapse, that it was with difficulty he was able to bear the subsequent treatment, and made a very tedious recovery. The practice I adopt in these cases, is to place my patient in a warm bath, 94° Fahr., for twenty-five minutes, and administer ℞.—Hydrarg. chloridi mit. gr. xxx; pulvis opii gr. iij; confectio rosæ ʒj. Ft. massa et divide en dosis No. iij; capiat unam 6ta quâque hora. Six hours after the last dose of calomel and opium, I give a full dose of castor oil, from an ounce and a half to two ounces, in emulsion, the abdomen being freely fomented with flannels, wrung out of warm water, and if the tenesmus is urgent—which it generally is—an injection of starch and laudanum is thrown up into the rectum. If the castor oil is vomited, it should be repeated six hours after the first dose. The effect is generally a copious discharge of bilious stools, with the immediate relief of all the urgent *enteric* symptoms. When these have subsided, and the disease has been reduced to simple dysentery, it may be treated by ten-grain doses of ipecacuanha, and a grain of powdered opium, every six or eight hours; and, finally, when all inflammatory symptoms have subsided, and mucous diarrhœa with tenesmus continues to harass the patient, the decoction of Granada or pomegranate rind, and syrup of morphia, may be given, as in simple dysentery. The mercury thus administered rarely produces ptyalism, and the patient generally makes a rapid recovery.

(4.) Dysentery, complicated with acute or chronic inflammation of the liver.

Symptoms.—In addition to the symptoms of simple dysentery, there is pain in the right side, increased by pressure or on a deep inspiration; sometimes sympathetic pain in the right shoulder; a yellow tinge of the conjunctiva, and high-coloured urine.

Treatment.—These cases bear bleeding better than either of the others. The whole attention of the practitioner should be directed to the affection of the liver, regarding the dysentery as only a symptom of the deranged state of the liver and portal circulation; but I rarely use the lancet, preferring topical bleeding, by leeches over the region of the liver, and applying a cupping-glass over the bites, which has many advantages over the use of poultices; you may even regulate the quantity of blood taken with great exactness, while it does not make such a mess in the bed. The bowels should be first well cleared out by calomel and rhubarb, āā gr. x, followed by a full dose of castor oil, and then the mercury should be given in divided doses, at intervals, till slight ptyalism is produced. When the inflammation of the liver has been reduced by these measures, the dysentery generally subsides; if not, you may administer ipecacuanha as in simple dysentery, but it is obvious that, until the morbid state of the liver is rectified, no permanent advantage can be derived from specific treatment.

(5.) Putrid, malignant, or gangrenous dysentery.

There is a variety of this disease called malignant or putrid, from the tendency of the intestines to pass into a state of gangrene. This form of the disease is well described by Dr. Cornnel. It ravaged the island of Guadaloupe, in the West Indies, in 1837.

Symptoms.—The evacuations of bloody mucus are very frequent, and contain patches of membrane from the mucous coat of the large intestines; they have the putrid odour of gangrene strongly marked, while the room in which the patient is, as well as his breath, is impregnated with a putrid odour. The abdomen is not very painful, but greatly distended by gases. The tongue is loaded with a blackish fur; fetid sordes accumulate about the teeth and lips. The features are changed and sharpened; there is great prostration of strength, with hiccough and a viscid cold sweat; death rapidly ensues. This is the most *terrible* form of tropical dysentery; it is very common in the interior of Peru, and even in Lima, but is hardly ever seen on the sea-coast. It is highly contagious.

Treatment.—The remedy which, in these cases, acts like a charm, is the extract of nux vomica combined with opium in the following formula: R.—Extract. nuc. vomicæ gr. iv; extract. opii gr. iij.—M. Ft. pilulas No. iv. One to be taken every three hours.

The quantity of the nux vomica should be augmented to twelve grains; that is, *three* grains for a dose, according to the circumstances of the case; mucilaginous drinks, and enemas of decoction of althea, with solution of chloride of soda, are to be administered. When the patient has passed from the state of extreme danger, his case should be treated according to

the symptoms that may present themselves. I am quite ignorant of the mode in which the nux vomica acts, but its administration has saved numerous individuals affected with the worst form of dysentery from the very jaws of death.

Of a very large number of cases treated on these principles, in the hospital, the deaths did not average more than *two* per cent. But I do not include in this calculation those unfortunate cases in which from neglect or previous bad treatment ulceration of the colon had been allowed to take place. In such cases I have found the sulphate of copper, in doses of two grains, made into a pill with half a grain of extract of opium, and taken three times a day, a remedy which, in many cases, proved successful.

Ipecacuanha has often been extolled as a remedy of great value in dysentery, but I am not aware that its use in the *full doses* I have been in the habit of employing with such almost certain success is generally known. The pomegranate rind no doubt owes its astringent virtues to the tannin it contains. It is a singular fact that, in those countries where dysentery most prevails, both ipecacuanha and the Granada or pomegranate tree are indigenous. That the bane and antidote should spring from the same soil is one of the remarkable laws of nature.

CALLAO, WAR STEAMER UCAYALI, April 12, 1860.

ART. V.—*Some Practical Remarks on Chronic Inflammation of the Uterus.* By J. L. TEED, M. D., Mendota, Ill.

HYPERTROPHY of an organ may be either an independent original condition, without any known cause, or the result of chronic inflammation. Hypertrophy of the uterus, however, is, it may be said, a normal circumstance, as in pregnancy, and the uterus once impregnated, and thus enlarged, never returns to its original size. This enlargement, as well as that of independent origin, will not, if confined within certain limits, necessarily produce very unpleasant effects, but when combined with debility of the system, and a loss of local contractility, they occasion falling or prolapsus of the womb, but not always combined with any unusual discharge.

The cases combining both prolapsus and discharge, most frequently requiring the aid of the physician, are those produced by chronic inflammation, generally of the uterine cervix, although often affecting the body and appendages more or less, many of which having but little disposition to get well of themselves, continue for years, sometimes, alternately better and worse; but the majority extending their influence, produce secondary diseases, undermining the health with a slow but certain progress, to induce a

premature death, or to terminate spontaneously, after years of suffering, when the uterine organs naturally fall into their state of inactivity.

Chronic inflammation of the uterus is met with most frequently in women of loose character, in whom it was first accurately investigated; it also very frequently occurs in married women, and is not unfrequently found in single women of irreproachable character; thus, although sexual intercourse may, and sometimes will produce it, it will arise from other causes.

These causes are various, including all those circumstances which occasion disorders of menstruation, parturition, irritation of neighbouring organs, prolonged lactation, &c. &c.

The symptoms of chronic inflammation of the uterus are very well defined; there will be pain in the hypogastrium and pubes, or in one or both iliac fossæ, generally in the left, situated about the middle of the bend of the thigh, or at the junction of the middle and inner third; sometimes the pain reaches across the abdomen, a little below the umbilicus; pain may be also felt in the small of the back and ilia, in the sacrum and coccyx, in the hips and ischial regions, following the attachments and courses of the uterine ligaments. There is also very frequently a dull aching, gnawing pain felt in the vulva, which may extend downwards a considerable distance along the inner sides of the thighs.

The organ itself makes its existence perceptible; and owing partly to its increased weight, partly to an extension of its posterior ligaments, allowing it to slide forwards into the cavity of the vagina, and partly to a change in its position, whether of ante, or retroversion, it gives rise to the sense of falling, from which it has derived a name, and to disturbances in the functions of fecation and micturition.

Sexual intercourse often produces intense pain, even on entrance, when the vulva is the seat of the pain referred to; otherwise, only when the cervix uteri is interfered with. Yet, owing to the state of continued excitement existing in these organs, it is indulged in to a considerable extent, sometimes sufficiently to defeat all the means used for its cure, while in the single, manustupration is often resorted to; in other cases, intercourse is absolutely loathed, and the married state is one of the greatest of the patient's misfortunes.

The discharge varies from a viscid, colourless, transparent mucus, to a thick yellowish, muco-puriform fluid, generally innocuous, but sometimes sufficiently irritating to produce excoriation of the external parts, wherever it happens to remain in contact with them for some time.

Among occasional symptoms are pruritus pudendi, and excoriations, somewhat resembling chancres, but wanting in the indurated base, and presenting no regular shape.

In addition to the local, we have the general symptoms of constitutional irritation; the digestive apparatus is disordered, and all its functions ill-performed. When the discharge is very considerable, it must be an additional

source of mischief, partly by consuming the nutriment absorbed, and partly by increasing the work of the eliminating organs in removing the residua; there is a frequent feeling of weariness, often constant, and rendered insupportable by very slight exertion; the mind partakes of the debility of the body, while the local irritation, riveting the attention to the deranged organs, occasions in some a state bordering on nymphomania.

On examining digitally, the os uteri will be found more patulous than natural, the cervix generally enlarged, and sometimes much elongated; its surface often tender to the touch, varying in its hardness, and occasionally tuberculated. When the body of the uterus is also enlarged, it is plainly felt as a hard round body through the cul-de-sac of the vagina, especially if the position of the cervix be altered.

On examining by the speculum, the surface sometimes abraded, or ulcerated, will present various shades of redness; the os uteri enlarged, is often filled with white, transparent mucus, so tenacious that it is with difficulty removed; the yellowish creamy discharge from the external cervix occupying the upper part of the vagina.

In the treatment of this disease, more difficulties are experienced than would naturally be expected from a review of various authors. If the disease have been of long standing, there is a local inflammatory condition, requiring depletion, and a general debility contraindicating it, a local disease requiring rest, a constitutional disorder demanding exercise in the open air; local conditions requiring the thoughts to be abstracted from them, and a morbid sensibility as continually recurring to them; whichever indication you essay to follow, there is one equally strong calling in the opposite direction. While the individual herself, impatient of restraint, distrustful of the result of treatment, discouraged from the duration of the disease, with all her inclinations and desires tending to the opposite of your counsels, presents an impediment, often insurmountable; when, in the course of the case, any reverse occurs, and the patient suffers a relapse, though slight, the difficulties become incalculably augmented.

In these cases, to subdue the local inflammation or congestion is of the first importance; and this is often best accomplished by free blistering, especially if there be much abdominal pain; apply a small blister of about four square inches surface, on one iliac fossa at night, and the next night but one apply another, close by the first, and so on, until the whole surface, from one ilium to the other, has been traversed by five or six small blisters; never remove the skin, but dry each up as rapidly as possible. Brown's blistering tissue is the best application; these consecutive blisters should be repeated at short intervals, until the pain is quite subdued; the local soreness and pruritus are easily relieved by a wash of acet. plumb. ʒij, extract hyoscyam. ʒiv, dissolved in rain water Oj. As an application to the cervix, Dr. Ashwell's iodine ointment, composed of iodine ϑj, iodide of potassium ϑiiss, lard or suet ℥ij; or the tannin ʒij, alum ʒiv, boiling soft water, Oij, recommended

by Dr. Tyler Smith; or the nitrate of silver, or its solution, ten to twenty grs. to ℥j of water.

The application of the nitrate of silver requires the use of the speculum, which had better be deferred as long as possible; many cases will get well without it, while its use tends to promote local congestion, and to fix the patient's thoughts more firmly on the seat of the disease. The nitrate of silver will, also, in some cases, produce sanguineous discharges, resembling the catamenia; if applied in the form of a moderately weak solution, this is not so likely to happen.

After the local inflammation is somewhat subdued, the use of the iron alum, in bitter infusion, as recommended by Dr. Tyler Smith, is very serviceable, when it does not produce constipation, or other intestinal disturbance.

The general treatment should be conducted with particular reference to the production of a healthy blood stream, watching carefully both the assimilating and depurating organs, particularly guarding against constipation. The use of stimulants requires great caution, as they may strengthen the inflammation, instead of the patient; the abdominal pain and heat will afford indications which may be followed with more safety, than the appearances of debility.

Early hours, both of retiring and rising, are very necessary, but especially of rising, which should always be done immediately, or soon after waking, always allowing enough sleep to satisfy the requirements of nature; but indulging in lying in a hot bed in the morning after waking, is injurious, as are late hours, heated rooms, and the excitement of parties.

The clothing should not be sufficiently heavy as to produce an overheated condition of the pelvis, and daily ablutions with cold water are extremely beneficial.

Mental occupation is a valuable auxiliary; the mind, when engrossed with some pursuit, becomes weaned from brooding over the ailments of the body; care should be taken in the selection of reading matter, and the better plan is to adopt some subject which may be made an object of study.

Should the prolapsus be productive of great inconvenience, the ring pessary advised by Dr. Meigs, will give great relief; it is of very easy application, and may be inserted by the patient herself without difficulty. It should be removed every night, and put into a basin of cold water, or it will occasion an accumulation of the coagulated discharges, and cause irritation.

After the inflammation has been reduced, which may, if very severe, require the application of leeches externally, or to the cervix itself; should much hypertrophy remain, the iodine ointment mentioned above, or a mercurial ointment made with suet, instead of lard, as advised by Dr. Simpson, may be applied, either by a sponge or a salve syringe; and the patient may use freely of artificial Kreutznach water, as advised by Dr. Rigby, in his

small, but comprehensive work on *Female Diseases*, a treatise of more sterling value than many works of much greater pretensions. The following is an analysis of Kreutznach water:—

Sod. chlor. . .	grs. 72.92	Pot. chlor. . .	grs. 0.97
Magn. chlor. . .	" 0.25	Calc. chlor. . .	" 12.98
Magn. carb. . .	" 1.27	Calc. carb. . .	" 0.27
Ter. carb. . .	" 0.20	Sod. brom. . .	" 0.30
Iod. mangan. and earthy bases with chlor.			" 1.47
Carbonic acid gas 5 cubic inches.		Water . . .	℥vij.

The maxim of Dr. R. C. Chambers should be ever remembered, "that the best remedy to a diseased organ is a stream of healthy blood, especially in chronic diseases;" and it may be that one great reason why so many of these cases remain uncured so long is, that specific treatment, as recommended by one or another, is followed, instead of studying the case individually, and bringing the general principles of therapeutics and pathology to bear upon it.

None of these remarks are intended to apply to malignant disease, corroding ulcer, or syphilitic affections of the uterus.

Art. VI.—*The Communicability of Secondary Syphilis.* By Richard McSherry, M. D., of Baltimore.

John H., a publican, asked my advice during the summer of 1859, for symptoms of secondary syphilis. He was then on a course of iodide of potash, and I recommended him to continue it. Within a month after, he casually consulted me as to the propriety of marriage, saying he was nearly or quite well. While doubtful, myself, as to the communicability of secondary syphilis, I advised him, by all means, to delay marriage indefinitely. My advice was not taken. On the 26th of October, he married a young girl of irreproachable character, whom I had known for many years. He and his wife removed immediately from this city.

On the 15th of March last he called, to desire me to visit his wife, whom he had brought back in bad health to her father's house, and he stated to me his apprehension that he had communicated disease to her. He did not wish her, if such proved to be the fact, to be made acquainted with the nature of her disease.

Accordingly, I took her in charge, and learned from her that, within a few weeks after her marriage, she was taken with an obstinate form of sore-throat, which was still unrelieved. For the past six weeks, she has had eruptions upon various parts of her limbs, trunk, and head; she has painful warts about vulva and anus; she is *enceinte*, having had no return of

menses since marriage; she has had no primary sores. I ascertained, upon further examination, that her husband had had no sores of any kind upon the male organ since marriage, but he had some excrescence about the anus.

The whole appearance of this poor girl was cachectic, and her countenance and manner exhibited the deepest dejection. She implored me to tell her, positively, what was the matter with her. I soon found that she had consulted an elderly female friend at her late place of residence, who had access to some medical books, and this friend had not been slow to inform her of the nature of her malady. The girl was convinced, but she wanted my assurance to justify a separation from the man who had injured her so deeply.

I postponed giving her a decided answer, but went on to treat her with iodide of potash and sarsaparilla, making local applications to the sores, according to their condition; some were open, and some had the scabs of rupia. I used, as local applications, the black wash, nitrate of silver, tincture of iodine; and to the warts, or condylomata, which were intensely painful, so as to destroy all sleep for many nights together (the physical pain, perhaps, had not more to do with this than the mental distress), a powder of tannin, arrowroot, and opium. The course of treatment was not very successful. With the advance of pregnancy, and its attendant discomforts, my patient got worse, rather than better.

On account of her great suffering, I substituted calomel and opium for the iodide and sarsaparilla. The change gave her some relief. While on this course, a daily dribbling of waters commenced about the 1st of July, a month before her expected confinement. On the 10th of July, I delivered her of her first child, a male, perfect, but of very diminutive size, though without any manifest disease. About the third day, a papular eruption made its appearance on the neck, and about the genitals. This appearance passed off spontaneously, when the child began to purge, and waste away, while its skin became deeply jaundiced. I gave it some very minute powders of hyd. c. creta, but the mother's milk failed, and the child wasted away, and died on the 27th of the same month. There was a dark discoloration across the hypogastric regions before death, but nothing more of the papular eruption.

Since its death, the mother is improving, on a modified course of mercury and opium; the sores and condylomata have nearly disappeared. She has taken no formal action against her husband, since she has been led to believe that he did her no *intentional* wrong.

Such are the outlines of a case which I think full of significant interest. The communicability of secondary syphilis is one of the most important questions of the day, and every case that bears upon the question has its importance. There is no doubt upon my mind but that, in this instance, the mother was contaminated through the fœtus, and that the first developments of the disease with her were of the secondary order.

Secondary syphilis appears to be rarely communicated by the simple congress of the sexes. Experiments have shown, indeed, that this form of disease may be inoculated, but a successful inoculation, where the morbid matter is absolutely thrust into the lacerated absorbents, will not prove that mere sexual contact will produce the same effect. It is surmised, but has not been demonstrated, that the semen, when failing to be prolific, may convey disease to the female. Instances, however, have been observed where man and wife have cohabited for some considerable time, where the man had been syphilitic, but was apparently cured, without transmission to the wife, and yet, when she has conceived, she, too, has manifested the contamination. (See papers on this subject, by Mr. Hutchinson, *Med. Times and Gazette*, Dec. 20, 1856, and Jan. 1857.)

There was published in the *Montpellier Médical*, during the past year, a remarkable instance of another most prolific method of transmitting the secondary disease, which was spread from a diseased infant. The case also has this much analogy with mine, that is, that the mother contracted her disease during, and, as I believe, in consequence of gestation.

Under the head, which I translate as follows, "Congenital syphilis transmitted from a husband to his wife and infant; from the latter to two nurses; from one of these to her mother-in-law; from the other to her own child and husband," by Doctor Junquet, of the 2d regiment of Engineers, there is the following summary, after the facts had been given in more detail.

The doctor at first was at a loss to understand the rapid extension of a disease so like secondary syphilis in appearance, while he had rather inclined to the school that that stage was not transmissible. But progress, symptoms, and cure, removed his doubts, even before he traced the disease to its starting-point.

Such is the order of facts, says Doctor Junquet, in conclusion, which I have observed, convinced that I had to deal with a syphilitic disorder, I wished to go back to its source. It turns out, from my investigations, that M. X. (whose diseased child had infected so many other persons) had had the venereal disease before his marriage. His wife, who had been up to that time in perfect health, experienced, within a short time after her marriage, various eruptions, which had impaired her health; an abortion of a dead child at six months was probably in consequence. Her second pregnancy, although more favourable, apparently, was more pernicious in its results; in fact, the infant, as I have said above, had, shortly after its birth, an erythematous rash, excoriations, aphthæ of the buccal mucous membrane, &c., of a specific character, as was shown by their affecting the nipples of two nurses, who were free from all affection while nursing their own children. One of them, on returning home, gave to her mother-in-law, who undertook to draw off the milk from her distended breasts, a virulent disease of the mouth, so that mother-in-law and daughter-in-law were for a long time

suffering from various eruptions subsequently. The other nurse was equally contaminated in giving her breasts alternately to her own child, and to that of M. X. With her the syphilitic disease manifested itself first by fissures, then by aphthæ and pustules on the breasts and vulva; by these, the husband was infected.

Such, he says, is the interesting history of this disease, which was successively transmitted to seven persons; it was a hereditary syphilis communicated from father to child. This latter infected the mother and two nurses. The ravages were not confined to these, since four other persons were successively attacked.

This is a strong chain of evidence, going to prove the communicability of secondary syphilis, and showing at the same time how the mother may become infected by the fœtus in the womb. M. X. had no apparent disease (at least none is mentioned), except strictures of the urethra following attacks of gonorrhœa, from which he had also suffered when unmarried. The taint of the secondary disorder undoubtedly was deep in his system, and, as it were, latent, but still, as the facts show, it was abundantly capable of transmission.

I do not consider commentary necessary on the case and facts presented in this paper; they must carry their own weight to the mind of the physician, and influence him, 1st, to the most extreme care in the cure of his syphilitic patients; 2d, to restraining, as far as he can, precipitate marriages; and, 3d, to guarding those whom he has to advise against the numerous dangers, both immediate and remote, proceeding from contact or intercourse with attainted subjects.

ART. VII.—*On the Therapeutical Use of the Oxalate of Cerium.* By CHARLES LEE, M. D., House Physician to Blockley Hospital.

ABOUT a year since, Prof. Simpson, of Edinburgh, first called attention to the medical use of this preparation, heretofore rarely known, even in the chemist's laboratory. Presented under such high authority, it is not surprising that in a few months there should be made, both in Europe and America, numerous trials of its efficacy in different gastric affections. It was used by Prof. Simpson, so far as I can learn, only in the vomiting of pregnancy. (*Med. Times and Gazette*, Sept. 1859.) But more recently it has proved useful in so much wider a field, that it promises to assume a permanent place among the mineral tonics, and, as such, some account of its therapeutic application may not prove uninteresting.

As regards the preparation itself, but few words are necessary. Its base,

Cerium, was first isolated by Berzelius and Hisinger, in 1809; together with lanthanium and didymium, it is obtained in considerable amount, as the mineral *Cerite*, from the mines of Sweden; and in this country it has been found, in the mineral allanite, in the interior of New York, and near Bethlehem, Pa.

From either of these sources, it may be obtained by means of the mineral acids and sulphuretted hydrogen at a high temperature, and finally precipitated by a solution of oxalic acid, as described in an interesting paper by Mr. Mayer, of New York. (*Am. Journ. of Pharm.*, January, 1860.)

As thus obtained, the preparation is a white granular powder, an oxalate of the protoxide of cerium, inodorous and tasteless, insoluble in water, alcohol, and ether, but freely soluble in sulphuric acid, by which, as Mr. Mayer remarks, it may be distinguished from the other salts of the earths.

When I first began to use the cerium, I limited it to cases of advanced pregnancy, which had resisted all the ordinary remedies, such as creasote, hydrocyanic acid, ice, bismuth, &c. I specify *advanced* pregnancy, for in no case have I seen this troublesome symptom appear before the fourth month, without yielding to creasote, or prussic acid, or better still, minute doses of dilute sulphuric acid and brandy. The following cases will illustrate these remarks.

CASE 1. Louisa M., æt. 32, was admitted to the obstetrical ward, 16th March, 1860, in the eighth month of her second pregnancy. For three months past, she has had at least two or three spells of vomiting every day, with utter distaste for food, and for some time has been under treatment in the city, without relief. When I first saw her, on April 3d, she was ordered to remain in bed, and to take one drop of creasote in emulsion every three hours; no improvement following in the next two days, this was changed for hydrocyanic acid, and subsequently for a mixture of dilute sulphuric acid and curaçoa.

After the lapse of a week, her condition was unchanged, with the exception of increased debility. All previous treatment was stopped, and a pill of two grains of oxalate of cerium was given every third hour. On that day she vomited once, two hours after taking the first pill; the following day she took the same amount before each meal, with no return of the vomiting. The cerium was continued one day more, and from this time until her confinement, April 22d, she enjoyed excellent health in every respect.

CASE 2. Hannah S., æt. 21, primipara, was admitted to the same ward, April 5th, apparently in good health. But in the course of a week, perhaps from restriction to the plain house diet, she was seized, on rising from bed, with severe vomiting, amounting, in a few days, to violent retching, and returning at frequent intervals, on her making the slightest exertion. For three days she was treated with opium, creasote, and subnitrate of bismuth, and kept perfectly at rest; but as no change was perceptible by the 19th, I resorted to the oxalate of cerium, giving every second hour a powder containing one grain of the cerium with a few grains of sugar. After the third dose her vomiting ceased entirely; but fearing a relapse, a similar

powder was given before each meal for two days longer, with as complete success as in the former case.

CASE 3. Charlotte L., æt. 28, was admitted May 16th, in a state of extreme nervous prostration. She expected to be confined in six weeks, but during the last four months she had suffered from such incessant vomiting, as to keep her in daily dread of an abortion. In her former pregnancies the same thing had occurred, once to such an extent as to induce labour at the seventh month; and then, as now, the vomiting would begin without any assignable cause, both during the day and night. For many weeks, she had eaten only one meal a day, and was disgusted by the mere sight of food, which was sure to bring on her vomiting. Her great nervous debility, and the apparently uncontrollable character of the emesis, induced me to prescribe the oxalate of cerium at once. She took at first two grains, and afterwards one grain every two hours during the day; but the first dose alone seemed necessary, for from that moment the vomiting never returned. The patient said it acted "like a charm," and until her child was born (at full term), her appetite remained excellent, and she felt quite as well as before her pregnancy.

CASE 4. In this case, though similar to the foregoing, the cerium was less happy in producing a permanent effect. When administered, it readily arrested the vomiting for a few hours, or during that day; and, by keeping the patient under its influence, to a slight extent, the emesis was held in check, until it gradually passed off entirely.

But, as I have remarked, the efficacy of oxalate of cerium appears by no means confined to the relief of vomiting in pregnant women. In the vomiting that often accompanies phthisis, in pyrosis, hysterical emesis, and the various dyspeptic conditions of the stomach, especially in atonic dyspepsia, I have found the effects of this remedy no less encouraging. In the following cases it was given to check the vomiting of phthisis.

CASE 5. C. F., æt. 58, was admitted to the phthisis ward about the end of March, 1860. He gained slowly in strength up to the middle of June, when he lost his appetite, and suffered from constant nausea and vomiting. This was always brought on by a severe spell of coughing, or by eating a single cracker, and the nausea remained even when the stomach was empty. Various remedies had been tried without relief, and on July 10th, he took, for the first time, one grain of cerium before each meal; he vomited once that evening, and once the following day, but thenceforward improved rapidly, in great measure regaining his appetite; and although the vomiting sometimes returned when the cerium was stopped, a few grains of the medicine always promptly arrested it.

CASE 6. James S., æt. 31, far advanced in phthisis, with slight valvular disease, had the vomiting well marked, when admitted, July 16th. He was extremely feeble, and could eat nothing; ordered Huxham's tincture and cod-liver oil, which only sickened him more. He was treated then with cerium, in doses of one grain every two hours; his vomiting ceased after the third dose, and during the ensuing four days that he was under treatment, his appetite was nearly restored; but no final report could be made of this case, as the patient was soon after removed from the hospital by his family.

CASE 7. Conrad G., æt. 20, entered the medical ward, with inherited phthisis, enfeebled from night-sweats, loss of appetite, and occasional vomiting, greatly increased by violent coughing. On July 18th, I ordered him a grain of oxalate of cerium an hour before each meal; in two days he said he felt better than for many weeks; he no longer vomited; his appetite had returned, and, with his increasing strength, the night-sweats rapidly diminished in severity, and recurred only at long intervals.

CASE 8 was one of hysterical amenorrhœa, characterized by violent convulsions, succeeded by gnawing pains in the stomach, with severe nausea and vomiting. I tried in vain to arrest this, and restore the patient's appetite by gastric sedatives, tonics, and nerve stimulants, but with no effect. The cerium was then prescribed in one-grain doses, with which—suspecting worms in the alimentary canal—I combined four grains of santonine; this was given every third hour, and by evening the vomiting and gnawing sensations in the stomach ceased, and, though they returned once or twice after subsequent convulsions, a few doses of the cerium invariably put a stop to the symptoms, as long as the case remained under my charge.

Finding the cerium so excellent in repressing vomiting, I tried its effect in fourteen cases of atonic dyspepsia, and uniformly with the same gratifying results. These cases were carefully selected, and only after an exact diagnosis, was the cerium treatment adopted, for benefit could not reasonably be expected, where the dyspepsia was dependent on malignant, or other organic lesions. And here it is worthy of remark that, whether in relieving the nausea, or simply restoring the appetite, the effect of the medicine was perceptible almost as quickly as in the cases first quoted. The same point is emphasized in the paper of Prof. Simpson, already referred to, and it was indeed this fact—the rapidity of its therapeutic action—that especially engaged my attention, and, after repeated experiments with this view, I was inclined to regard it as peculiarly characteristic of the cerium.

In reference to the view of its therapeutic nature expressed by Prof. Simpson, who considers it a *sedative tonic*, I think it just to state that I endeavoured to test its validity in several cases of acute and subacute gastritis, both idiopathic and supervening on debauch, or delirium tremens, but in none could I detect any amelioration of the symptoms. I make this remark with no disposition to impugn the opinion quoted, and only to record my experience so far as it extends; for, I have neither the inclination nor the data sufficient to build a theory upon the therapeutics of an agent as yet so little known as the oxalate of cerium.

ART. VIII.—*Surgical Cases.* By PHILIP S. WALES, M. D., Assistant Surgeon U. S. Navy. (With two wood-cuts.)

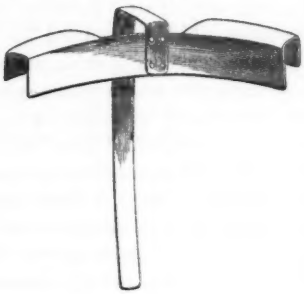
CASE I. *Fracture of Lower Jaw.*—J. O. Sea, age 30, was admitted on the list April 19, 1859. He had been on liberty at Nagosaki, Japan, and while ashore drank too freely of saki (Japanese wine), which intoxicated him pretty thoroughly. In this condition he came aboard and created some disturbance, which necessitated his confinement in irons; while this was being done, some one or other struck him a heavy blow on the left angle of the lower jaw with a marlin-spike, knocking him senseless on the deck. Soon, however, he slept, and two or three hours passed away, and then, awaking, he complained most bitterly of intense pain in front of the left ear. I then saw him, and easily detected a fracture at the symphysis menti, and being late at night, I simply applied a bandage until morning, when a better opportunity would exist for an examination. On removing the bandage at that point, I discovered that the bone was also broken at its left condyle, the latter being entirely separated from its ramus and drawn forwards and upwards, while the ramus was depressed downwards and backwards. At the symphysis blood issued from between the two front incisors, which were situated the one behind the other, the left half of the bone being depressed one-quarter of an inch or more below its fellow. The fragments of bone were now replaced as well as possible, and a piece of soft pasteboard applied beneath the chin and secured there by Gibson's bandage. This arrangement remained on some hours, but it was found that it would not retain the left half of the bone in contact with the right; then Barton's bandage was tried, but it failed also; when I attempted to wire the teeth together, but they were so closely planted, and overrode each other, and the great pain this process caused, entirely prevented me from obtaining any satisfactory result. It then occurred to me that an apparatus might be made to answer all the indications of treatment, so I adopted the following contrivance:—

First, I made a model of the lower jaw with softened pasteboard, and then spread this out on stiff block-tin, which was marked, cut into shape, and modelled so as to exactly fit the inferior maxilla, with two arms extending up in front of the ears. The horizontal part was so rounded as to fit the lower edge of the bone for its whole extent, and projected upwards towards the alveolar process about half an inch, and backwards beneath the chin an inch and a quarter—this edge being at the same time circular and fitting the neck above the hyoid bone. The whole was then covered with buckskin, and padded here and there as necessity called for pressure at this or that

point. (See Fig. 1.) Three straps were attached to the apex of the ascending ramus: 1, buckling over the os frontis; 2, over the ossa frontalia; and 3, over the os occipitis—all being secured on the median line by straps.

Fig. 1.

Fig. 2.



4. Another strap (5) passes through a bracket soldered under the body of the apparatus, and buckles over the back of the head.

Secondly, to the anterior or chin part of the apparatus a slat is soldered, and through this passes a perpendicular bar of stiff and flattened wire bent opposite the mouth at a right angle, and projecting into it is soldered to the dental piece, which is made of tin, and fitting the teeth clasps them on either side with an interval between the lateral limbs. (Fig. 2.) This, the dental piece, is movable along with the perpendicular bar which slides through the chin slat, and can be secured by the thumb-screw.

In my case I applied the apparatus in the following manner: First, the dental piece was applied after the teeth were brought into the same line of continuity, but still not on a level. Now the "chin piece," as adapted with the perpendicular bar sliding through its guide and the straps buckled, thus bringing the fragments into their natural position, and the lower jaw between two parallel forces, forcing the ascending ramus forward and upwards towards its condyle, which is subject to a backward pressure by a small compress placed on the inner side of the ascending limb of the apparatus, and in front of the left ear. When the dental and chin pieces were sufficiently approximated, the thumb-screw was screwed upon the perpendicular bar, thus securing a maintenance of this relation.

When the apparatus was thus nicely adjusted, it felt comfortable to the

patient, relieving the pain caused by the displacement of fragments, and did not inconvenience him in taking fluid nourishment. On the 20th of May the apparatus was removed, and the fragments were united nicely, and a line of callus could be felt on the inner surface of the bone, behind the incisors, one of which had a small fistulous orifice over its fang.

In another case, the lower jaw was fractured in three or four places, along with that of the right superior maxillary, producing frightful laceration and contusion of the soft parts. The wound was produced by a discharge of cannister from a Chinese eight-pounder, the shot having glanced from the gun the patient was aiming. Considerable hemorrhage ensued, and the person lay senseless for a long time; finally he rallied, and then the lips of the wound were brought together, the fragments adjusted as well as possible, when the chin-piece simply of this apparatus was applied, which allowed the free use of cold water dressings, &c. The apparatus was kept on until union had taken place, after which a few spiculæ of bone were discharged, and the patient got well without deformity; the lips, however, adhered to the gum, but which was subsequently separated with a few touches of the knife.

Now, in this case, I think it answered admirably in affording a bed of the proper shape for the fragments to lie in, at the same time resting them in their natural position.

The "dental piece" can be made into an infinity of shapes, to suit different cases, and by aid of a form with the lateral pieces connected by an arching transverse bar, I succeeded in retaining in place a large piece of the alveolar process, containing three teeth that had been broken off.

CASE II. *Amputation of the Shoulder-Joint.*—Wm. Wilson, second gunner, age 35, born in Scotland, was admitted with a gunshot wound of the arm and shoulder, June 14, 1859. A salute was being fired with two twelve-pounders, brass-guns, which were loaded and fired with great rapidity; one of them "hung fire," when this man, thinking the gun had missed, suddenly introduced his ramrod, and hardly sent it home, when the gun exploded, blowing him from the ship's deck into the water. A boat was immediately sent, and he was picked up and brought on board, having four fingers of his right hand completely destroyed, the wrist-joint disorganized, and a compound fracture of the radius and ulna, two inches from the tuberosity of the former; besides, the parts were much bruised and burned. A deep wound, penetrating the shoulder-joint, commenced under, and behind the axilla, at the lower margin of the latissimus dorsi, and extended anteriorly across the part, close to the side of the chest, to the convoluted tendon of the pectoralis major, the shoulder being considerably contused and blackened by powder. The humerus was broken at the fracture of the upper with the middle third. The arm was pulseless from the axillary artery, together with the vein and brachial plexus of nerves, being

cut through. From this extensive injury of bloodvessels only, a slight oozing of blood took place.

The face was burned and much swollen, the eyes being completely bunged up, and prominent. A deep wound was seen penetrating above the edge, into the left orbit, with the eyeball seemingly depressed, and its lower lid badly torn. The cornea of both eyes seemed to be uninjured. A consultation was held, and amputation at the shoulder-joint agreed upon.

The patient was put under the influence of ether, and compression made on the subclavian artery. An external flap was made of the deltoid, by cutting from without inwards, and the head of the humerus was disarticulated, and the knife passed to its inner side, and the incision completed by keeping it close to the side of the thorax, exposing the serratus magnus, this having to be done, on account of the extensive injury in the axilla. The flap was now brought to the side of the chest and secured by six interrupted sutures and narrow strips of adhesive plaster, the arteries having been previously secured by twelve ligatures. About an ounce of blood was lost during the operation.

Cold-water dressings were applied, and the patient put to bed, and had an anodyne of sulphate of morphia given him. Olive-oil and lime-water were applied to the burns on the face. The patient passed a good night. On the 15th, had some febrile excitement; gave neutral mixture at intervals, and repeated the anodyne, which procured him a good night's rest.

17*th*. Doing well; skin cool; pulse reduced in fulness and frequency; bowels not opened. Ordered pulv. rhei gr. xij.

18*th*. Did not rest well last night; complains of pain in the shoulder. A splinter of the oak ramrod, an inch and a half long, was removed from the wound over the left eye. Wound dressed with cold water; eyes and face improving; bowels moved; allow tea and toast.

20*th*. Has been doing well, wound healing by first intention; wound of the eye discharging pus copiously. Gave anodyne at bedtime.

23*d*. Had a good deal of pain in the shoulder yesterday evening, could not sleep. Gave yesterday, ol. ricini, which produced two evacuations.

24*th*. Has been sitting up to-day; allow chicken-soup.

28*th*. Doing well; five ligatures were removed this morning.

July 1. Improving; another ligature came away; dress wound, &c. The cornea of the left eye has become opaque and horny. Has been taking sherry for several days; omit it and substitute brandy. Bowels opened; pain in the left eye; all the ligatures have come away except two. Gave anodyne at bedtime.

26*th*. Complains of uneasiness in the frontal sinus on the left side; wound over the eye fills up slowly. All the ligatures have been detached.

August 1. Improving rapidly; wound of the eye filled up with granulations.

10*th*. Improving.

30*th*. Wound of the arm entirely and firmly healed; a small fistulous orifice alone remaining over the eye.

Four months after this I heard from the man, and was told that another oak splinter was removed from the eye, and then the wound healed, and the patient is now enjoying excellent health.

ART. IX.—*Case of Extensive Compound Fracture of the Cranium. Severe laceration and destruction of a portion of the brain, followed by fungus cerebri, and terminating in recovery.* By BEDFORD BROWN, M. D., Yanceyville, Caswell County, N. C.

SUFFICIENTLY numerous cases are on record of perfect recovery after dangerous and extensive injury of the brain from mechanical causes; but certain peculiarities in the treatment adopted during the progress of the present case, and the success attending them, seem to justify our adding it to the list of those already published of a similar character.

The subject of the present case was a boy about ten years old, who was kicked by a horse recently shod, producing a compound fracture, with depression, fractured bones being imbedded to the depth of three-quarters of an inch in the substance of the brain. The fracture occupied a large portion of the right side of the frontal bone, extending from just above the superciliary ridge nearly to the coronal suture above, and in the opposite direction from about the central portion of the os frontis to its point of union with the parietal bone. The opening in the skull would have measured about two inches in one direction, and an inch and a half in the other. The fractured bones, though deeply depressed, were rather loose from being entirely separated from the periosteum and dura mater, and, when completely removed, left the entire right anterior lobe of the brain exposed. The form of the wound was rather semilunar, corresponding to that of the horseshoe. The sensibilities and voluntary powers of the patient were perfect. Indeed, the cerebral functions were apparently entirely unimpaired. A large amount of blood had escaped by hemorrhage. Portions of lacerated brain, that had been forced out, were adhering around the edges of the wound, in all at least a teaspoonful.

I requested Dr. Roan, my partner, to attend the case with me. On commencing our examination, we found the sensibilities of our patient so extremely acute as to prevent all further proceeding without the aid of some anæsthetic. Having no guide to govern us in forming an opinion of the effects of this class of agents on a brain so dangerously injured, we discussed the probable results of the procedure with caution and prudent deliberation. I am not aware of any published case of the kind, wherein

anæsthetics were resorted to during the operation for the removal of the depressed bones; usually there exists no necessity for it. But this means affording the only chance of quieting the violent struggles and resistance of the patient, we proceeded cautiously, while the most serious apprehensions suggested themselves to our minds of the result, to administer by inhalation a combination of sulphuric ether and chloroform until the system became completely insensible. On examination, the fractured portions of bone were found to have been driven deep into the brain, backwards and upwards under the sound bone, detaching the dura mater therefrom to a considerable extent. The fractured portions, being separated from both periosteum and dura mater, were removed by means of the elevator and forceps. The spiculæ were so numerous and deeply imbedded, that we were under the necessity of proceeding cautiously and slowly. We removed in all ten pieces, some of them two inches in length. This part of the operation occupied at least fifty minutes, during which we were compelled to repeat the anæsthetic several times, as the effects subsided.

Our preconceived ideas in regard to the specific action of anæsthetics would very naturally deter us from their use. Their effects in this case on the brain, at least so far as the circulation of that organ is concerned, were made perfectly manifest. Here a large portion of the surface of the organ was completely exposed to view, and any physical change in the brain, produced by the agency of the remedy, could be easily observed. Considering the various speculations in regard to this influence, the effects in this case were highly interesting. Hemorrhage, which had been free previously, ceased almost entirely after the full anæsthetic impression had been produced.

It is conceived by the profession that under the impression of chloroform the actual vascularity of the brain is increased; that absolute congestion takes place. The present case afforded an ample opportunity to determine this question definitely. Whenever the anæsthetic influence began to subside, the surface of the brain presented a florid and injected appearance. The hemorrhage increased, and the force of the pulsations became much greater. At these times, so great was the alternate heaving and bulging of the brain, that we were compelled to suspend operations until they were quieted by a repetition of the remedy. Then the pulsations would diminish, the cerebral surface recede within the opening of the skull, as if by collapse, the appearance of the organ becoming pale and shrunken, with a cessation of the bleeding. In fact, we were convinced that diminished vascularity of the brain was an invariable result of the impression of chloroform or ether. The changes above alluded to recurred sufficiently often, during the progress of the operation, in connection with the anæsthetic treatment, to satisfy us that there could be no mistake as to the cause and effect. Again, these changes began invariably to appear with the earliest influence of the remedial agent. As consciousness diminished, in a corre-

sponding ratio there was diminution of vascularity; and as the mental powers returned, the contrary would occur.

I feel satisfied that the congestion detected in fatal cases from the use of anæsthetics, is not the cause of the fatality, but the consequence of too great an influence exerted on the nerves presiding over the processes of respiration and circulation. When the sensibilities of these systems of nerves are so far impaired as to fail to respond to the stimuli of air and blood, the equalization of the circulation is immediately destroyed, hence the accumulation of the fluids in the larger vessels. When anæsthetics are absorbed through the lungs by inhalation, the agent is received directly into the circulation, and thence distributed to the remotest parts of the system, and in so doing each distinct system of nerves is brought under their influence simultaneously. The systems of voluntary, sensitive, special sensation and reflex nerves, sharing alike the complete anæsthetic influence. But those great systems of nerves, the pneumogastric and ganglionic, presiding over two of the most important and indispensable functions of organic life, are not influenced in corresponding degree with the others. Nevertheless, their action is diminished to a certain extent, as is evinced by the diminished frequency of the respiration and heart's action, and in the present case a decrease of cerebral vascularity. Further, under the full impression of anæsthetics, the capillary circulation is generally impaired, from loss of force in the action of the heart, and consequently the fluids collect in the large vessels of the system.

The actual influence exerted by anæsthetics, when introduced into the system by inhalation, is a question of paramount importance, not only in a surgical point of view, but one of exceeding interest in certain medical relations. This class of remedies have recently come into use for the treatment of convulsions originating from certain causes. In convulsions developed during or after parturition, or during an attack of *mania à potu*, or convulsive attacks originating purely from traumatic causes, the inhalation promises to accomplish much as a remedy.

In the present case, we had every reason to believe that the anæsthetic influence was decidedly that of a direct sedative over both circulatory and nervous systems.

It is to this influence that the good effects of the anæsthetic in this case is due. We might go even still farther, by making the suggestion that the same class of remedies may be applicable to those violent acute cases of cerebral inflammation that occasionally occur after a proper degree of depletion. No less an authority than Prof. Skoda, of Vienna, has recently lauded very much the employment of chloroform in the treatment of acute pneumonia. In all of this testimony, we have sufficient evidence of the fact that chloroform and ether possess remarkable sedative powers over the circulatory system, when taken by inhalation.

After all the fractured portions of bone had been carefully removed, the

appearance of the wounded brain was anything but encouraging. All of the dura mater covering that portion was torn into shreds, which were removed with the knife. Also all of the cortical, and some of the medullary portions of that part of the organ were lacerated and loose. This was thrown out of the wound by the cerebral pulsations, and amounted in quantity to two or three drachms. After the wound had been thoroughly, but carefully, cleaned with the sponge, and there was a cessation of all hemorrhage, the edges of the integument were brought together by means of sutures, leaving the most dependent angle of wound open, to admit of the escape of such fluids as might accumulate. Over this a dressing was applied, moderately firm, composed of a linen compress secured by a bandage. Our patient soon reacted well and recovered his consciousness perfectly. We left him for the night with injunctions to the nurse to guard him against all excitement.

After-treatment.—In thirty-six hours after the injury, symptoms of inflammatory reaction began to make their appearance. An active inflammatory fever was developed, attended with pain in the head, vomiting, constipation, and preceded by a distinct chill. The pulse ranged at about 125 in the minute. There were slight indications of mental disturbance. As the patient had already lost a large amount of blood from hemorrhage, I deemed it prudent to treat the case without any further abstraction of blood; therefore, after prompt and free purgation, Norwood's tinct. veratrum viride was administered at intervals in sufficient quantities to reduce the circulatory excitement and keep it within safe limits; cold applications were made freely to the head. Under this treatment I had the satisfaction of witnessing a material improvement in all of the symptoms in twenty-four hours. This course was persevered in for three or four days with an entire and permanent relief of the inflammatory excitement.

Fungus Cerebri, a peculiar method of treating it.—At a period of about eight days from the reception of the wound, during which time there had been some purulent discharge, the dressings became displaced, and on their removal it was discovered that the sutures had cut their way through the integument, the wound had reopened, and a large fungus cerebri filling the entire opening was protruding nearly an inch from the skull. The appearance of fungus arising during the treatment of injuries of the skull and brain has ever been considered a formidable complication. The principal means recommended for the relief of this condition is that of mechanical pressure. The knife and application of various caustics for the destruction of the fungoid growth have also been recommended. The chief difficulty arising from ordinary mechanical pressure is, that when it is made with sufficient firmness to prove efficient, symptoms of compression of the brain and coma are liable to supervene from its use. To obviate these difficulties, an appliance was resorted to possessing all the requisite power for the perfect reduction of the fungus within proper limits, without any of the injurious effects of ordinary pressure.

This plan consisted of what might be very well termed a self-regulating graduated compress; the compress was composed of a common surgeon's sponge of close and soft texture and sufficiently large to more than cover the entire wound. Previous to application, the sponge was subjected to firm compression for the purpose of reducing its bulk to as small a compass as possible. This process is of importance as regards the action and ultimate success of the remedy. Before the application of the sponge, a piece of soft linen was laid over the surface of the fungus to prevent the rapidly forming granulations of the growth from making their way into the interstices of the sponge. Over this the sponge was applied and secured moderately firm by a few turns of a broad roller around the head. The application of this peculiar compress created no injurious or unpleasant consequences whatever. The principle of action of this method of exerting mechanical pressure is one possessed by no other means; the true rationale of which may be explained thus: the constantly exuding excretions from the wound and fungus are gradually absorbed by the porous body of the sponge, from which the elastic compress is made to expand regularly and progressively, exerting a very decided but yet equable and gradual pressure, which ultimately, with scarcely a perceptible progress, reduces the morbid mass to its proper limits within the cranium and retains it there. At the end of a few days, when the dressings were removed, it was found that this object had been accomplished in the most satisfactory manner; the fungoid mass had been reduced even beneath the edges of the surrounding bone; the edges of integument were now brought nearly together by means of adhesive straps placed across the wound, and over this the sponge compress and bandage reapplied as before. The same dressings were renewed every few days as they became displaced, at each of which times a progressive diminution in the dimensions of the wound was observable; in three or four weeks the wound closed perfectly by union of the edges of the integument in a well formed cicatrix. The patient now, more than eight months since the injury, has continued in good health up to this period. When he is under the influence of much mental excitement, the pulsations of the brain are still visible through the large cicatrix.

ART. X.—*Obstetrical Cases.* By ROBERTS BARTHOLOW, M. D., Asst. Surgeon U. S. A.

THE subjoined cases seem to me sufficiently rare and curious to justify me in presenting them to the readers of this Journal. Whilst the first case does not determine the lesions peculiar to dropsy of the amnion—if there be such—it may, in connection with others of a like character on

record, assist in the establishment of a just pathology. Considered in this light it may prove useful.

The second case presented difficulties not frequently met with. In clinical experience, the diagnosis in cases of this character cannot be made with the facility with which writers on female maladies assign to each symptom its full significance and diagnostic value. Doubts may arise in the course of such complications, which the most faithful study of all the signs and symptoms present cannot resolve. A fact not less true, than "that errors in diagnosis are more frequently traceable to forgetfulness in searching for all possible evidences of disease, than to misinterpretation of those actually discovered."[1]

CASE I. *Dropsy of the Amnion and Discharge of the Watery Fluid from the Vagina.*—Mrs. ——, æt. 26. Has black hair, brown eyes, brunette complexion; five feet five inches high, and weighs one hundred and thirty pounds. Has had two children; miscarried of a third, some months ago. Previous to this miscarriage had enjoyed excellent health, but since, has been somewhat ailing. Is now pregnant for the fourth time. When about four months advanced, October 10, 1859, without any warning suffered an uncontrollable "bearing-down," and a sense of heat and burning about the vagina, which was followed by the discharge of about two ounces of watery fluid. Her abdomen, which was much larger than usual at this period, seemed to be a little smaller after this flow, but on the following day had increased to its usual size.

I saw her on the 25th of the same month. She represents that these attacks have happened nearly every day, and that the amount of water discharged increases at each emission. Her condition is as follows: her countenance is pale and anxious; she has a good deal of pain and aching in the loins and lumbar region, and complains of weakness and inability of the lower extremities. She gets out of breath and is fatigued upon making the least exertion. She suffers from pains in the face and head (tic douloureux) and has frequent paroxysms of hysteria. Her tongue is pale and slightly furred; mouth pasty; has much thirst; is costive. Her urine is rather scanty, but, she says, normal in appearance; she micturates frequently with pain and difficulty. Her abdomen is as much distended as at the full term, and occasions as much discomfort. The enlargement is uniform, and the uterine globe can with difficulty be defined filling up the whole cavity. Fluctuation obscure and deep-seated. The movements of the fœtus are frequent and active; she thinks more so than usual at this period.

She was directed to take a laxative and an anodyne, and to rest as much as possible in the recumbent posture.

Notwithstanding these measures, the discharges of fluid continued as before, but in increasing quantities.

On the night of the 15th of December, she was awakened by a severe "bearing-down pain," and a profuse discharge of fluid, estimated at thirty-two ounces. A slighter flow continued until morning.

December 16. Made a vaginal examination this morning. The external parts and the vagina are moist and relaxed; the os soft and patulous; no

[1] Preface to "What to Observe."

membranes can be felt. The abdominal distension is greatly lessened and the uterine tumour appears below the umbilicus. She feels altogether lighter and better, but on making an attempt to move around the room, considerable pain is experienced, accompanied by the discharge of water. This state continued, notwithstanding the administration of opiates and the maintenance of rest until the night of the 18th, when violent pains coming on, I was sent for. On making an examination I found the os uteri relaxed and the left lateral plane presenting without the "bag of waters." After waiting as long as I could with propriety, to see whether the case would terminate by the "spontaneous version," I turned and brought down a foot. A living male child was born. The placenta was delivered with some difficulty and delay; its size was enormous for the period, and occasioned more pain than the passage of the child. The uterus remained quite voluminous for two months. The lochia was profuse, and having apparently ceased in two weeks, came on again and persisted obstinately for two weeks longer. Under the use of blisters to the sacrum, injections of cold water and the administration of tincture of ergot. This discharge finally ceased, and Mrs. —— convalesced satisfactorily. The child lived feebly twelve hours.

Approximately, about three gallons of fluid were discharged from the first flow on the 10th of October, to the labour on the 18th of December, 1859.

Remarks.—A watery discharge from the vagina, and dropsy of the amnion, are treated by obstetrical writers as distinct pathological conditions, and undoubtedly, frequently are such; but in this case, were conjoined. The former state, it is said, occurs in three modes: 1st. As a profuse secretion by the glands of the cervix uteri; 2d. As a secretion of the mucous membrane of the vagina; 3d. As a "dribbling" of the liquor amnii, or liquor chorii. I need hardly intimate the inapplicability of the first two explanations to the phenomena in the above case. For the following reasons, I conclude that the fluid was derived from the cavity of the amnion: the liquid had the sensible qualities of the liquor amnii; odor, fluidity, and slight unctuosity, derived from the vernix caseosa; the discharge occurred at intervals, in a sudden gush, with pain and uterine contraction; the size of the abdomen was lessened by each flow, and moreover, when labour came on, no membranes presented, nor was there a discharge of water, corresponding to the usual flow, when the membranes are ruptured.

The following symptoms indicated clearly enough, dropsy of the amnion: the signs of pregnancy were well marked; the sudden enlargements alternating with the diminution of the abdomen after an emission of fluid, indicated that the cavity of the uterus was the seat of the dropsical effusion; the sense of fluctuation communicated to the hands placed on opposite sides of the abdomen, was that of a deep-seated fluid, and had not the distinct undulatory motion of the aqueous accumulation of ascites; there was no œdema of the labia or inferior extremities, and, finally, the fluid discharged had the characteristic qualities of the liquor amnii.

The pathological peculiarity of this case, was the unusual size of the placenta; it was fully one-third larger than the largest healthly placenta

at full term, and the vessels of the cord had a corresponding development. I could discover no disease upon examination of the placenta, other than simple hypertrophy of its proper structure. The amnion and chorion exhibited no traces of inflammation or other disease. I find upon reference to the literature of this subject within my reach, that this peculiarity existed in nearly all the cases of dropsy of the amnion. In some instances syphilitic disease affecting the amnion seemed to have caused an undue accumulation of fluid; but in this case there is no reason whatever to suppose that a syphilitic taint existed.

Mrs. —— was six and a half months advanced at the time of her premature labour, calculating from the last menstrual period. The child had all the vigor and development belonging to that period of intra-uterine life, and its vitality was therefore in no way influenced by the collection and discharge of the watery fluid. It had been otherwise, if a syphilitic taint had contaminated the system of the mother.

CASE II. *Anasarca and Ascites occurring with, and masking the existence of Pregnancy.*—Mrs. ——, æt. 24; has auburn hair, blue eyes; is five feet six inches high; temperament, leucophlegmatic. Married about one year ago (August, 1858). Menses ceased some time during last May, precise date not recollected. Pregnancy commenced with the usual functional disturbances, morning sickness, various nervous and hysterical phenomena, &c. She then began to lose flesh and to experience jactitations of the limbs and involuntary fantastic movements (chorea). She left the post on a visit, and whilst absent these symptoms increased in severity, and the nausea and vomiting interfered so much with the process of nutritive assimilation that she became much emaciated. She consulted a civil physician, whose principal remedy was Fowler's solution, which he continued until her stomach would retain nothing, and all the other symptoms were aggravated. A consulting physician prescribed cimicifuga (*Actea racemosa*), under the use of which she improved. The involuntary movements were never entirely relieved. After this improvement, her abdomen suddenly enlarged and she began to notice œdema of the labia and inferior extremities.

I was consulted for the first time on the 20th of September, 1859. She appears in tolerable health, but rather pale and flabby. Her eyelids are slightly swollen; abdomen very large, but as she was sitting in her parlour, I made no special examination. She reports that the movements of the fœtus had been active some days before, but have not been felt since. Lower extremities much enlarged and pit deeply. Has a painful sense of fatigue upon making the slightest exertion; cannot walk across a room without assistance. Pulse is full and rapid; respiration hurried; tongue clean; appetite good; great thirst; stomach irritable; bowels constipated; urine scanty but reported healthy; bladder irritable.

Ordered a laxative and the following: ℞.—Acet. scillæ, spts. ætheris nit., ää ℥j; potassæ acetat. ℥j.—M. To take a dessert-spoonful three times a day. Diet to be mild and unstimulating.

September 25. No improvement. The stomach would not retain the mixture. The œdema has become general; the face and upper extremities pit under pressure; the vulva is enormously enlarged. Opened a vein and abstracted 12 oz. of blood. To take pulv. jalapæ comp. ℥j.

26*th*. The anasarca has disappeared since the venesection, most suddenly; but the abdominal distension is as great. A violent cephalalgia has supervened, affecting principally the orbital and frontal regions.

October 1. Various anodynes and antispasmodics relieved the cephalalgia, and she expresses herself as much better. In the evening, after having been unusually cheerful, her attendants observed a sudden alteration in her appearance, and, becoming much alarmed, sent for me. Found her in an hysterical paroxysm; had the vacant countenance, the meaningless eyes, the chokings and sobbings characteristic of that affection.

3*d*. This morning she awoke with nausea and vomiting, apparently produced by a dose of morphia, administered to quiet restlessness and induce sleep. Within the last twenty-four hours the anasarca has returned; she is in great distress, constantly changing her position and crying out with the pain attending every movement; her eyelids and cheeks are swollen and wrists pit under pressure. The vulva and inferior extremities are if possible more distended than before. Girth of abdomen forty-two inches. The abdominal walls are thinned by the pressure, and the integument has that striated appearance seen in advanced pregnancy or ascites. The enlargement extends to the ensiform cartilage, and is uniformly dull and flat on percussion, except a very limited spot at the epigastrium; fluctuation most distinct; sensibility so exquisite that she cries out with pain at the gentlest percussion. The uterine globe cannot be defined. A careful exploration fails to detect either the sounds of the fœtal heart or the placental souffle; the fœtal movements no longer felt. The distension of the vulva is so great, and the sensibility of the parts so exalted (hyperæsthesia), that it is impossible to make a satisfactory vaginal examination. After repeated efforts I was unable to reach the os uteri, and could not, therefore, determine the state of the organ or practise the "ballottement." The diaphragm is pressed up by the accumulated fluid against the lungs, impeding respiration, which is consequently hurried and laborious. Respiration 30 per minute; pulse 125, quick, irritable, but not deficient in strength; action of the heart laboured, but no murmur; no abnormal pulmonary sounds; has but little appetite; considerable thirst. Her mental condition is hysterical; she has become garrulous; laughs incessantly; has an imperfect power of prehension. Ordered pulv. jalapæ comp. ʒij, to be followed by potassæ bitart. ℈j every four hours.

4*th*. The compound jalap powder was retained and produced three copious stools. Passed in the last twenty-four hours 12 oz. of urine. The nurse reported a quantity of blood in the urine, but threw it away before my visit. In the evening ascertained that Mrs. —— had made frequent attempts to evacuate the bladder without success—introduced the catheter and drew off 16 ozs. of urine.

Chemical and Physical Characters of Urine.[1]—It is turbid, yellowish, and has an ammoniacal odour. Nitric acid causes an abundant precipitate, unaffected by heat. Under the microscope, desquamative casts, epithelial scales, some blood-globules and numerous crystals of the mixed phosphates appear.

5*th*. Within the last twenty-four hours, 28 ozs. of urine drawn off—a considerable increase. Chemical and physical characters unchanged. She is restless; requires frequent changes of position; cannot lie down, but is supported in the semi-erect posture. Pulse 120.

[1] Not having a specific gravity bottle or urinometer at hand, I am unable to give the specific gravity.

12*th*. Considerable improvement since last date. The bi-tartrate of potassa has produced pretty free diuresis, the daily amount of urine having been raised to 60 ozs. To-day the abdomen, at its most prominent part, measures thirty-five inches, and the œdema has disappeared from the upper extremities and from every part of the lower extremities except the feet. But a slight cloud appears in the urine to-day on the application of heat and nitric acid. She is still hysterical; has various hallucinations due in part to some obscurity of vision (functional amaurosis.) Cannot distinguish persons who enter the room, except by the voice. Her eyes have a vacant stare and the pupils are dilated and sluggish. For the last three afternoons has had a chill followed by fever and perspiration. To take at noon 10 grs. of sulphate of quinia.

13*th*. The chill was very slightly marked this afternoon. The fœtal movements felt to-day for the first time since my attendance. On placing the hand upon the uterine globe, now readily defined, the movements of the fœtus are excited.

15*th*. Having had a decided chill yesterday afternoon, I ordered to-day 15 grains of quinia. A marked diminution in the number and frequency of the arterial pulsations resulted, and she lay quietly with a cool skin, without the usual chill and fever.

17*th*. Is much better; pulse is slower and the breathing comparatively free from oppression. Does not require such frequent changes of position. The abdominal tenderness much less. Bladder torpid; catheter still necessary. No chill to-day.

18*th*. Was called at 1 A. M. Mrs. —— was suffering from violent pain. On examination found the os relaxed and the head presenting. In two hours a male child was born, stillborn, of the development usual at five months. Placenta of the ordinary size; amount of liquor amnii, normal.

In a few days, every dropsical symptom disappeared, and Mrs. —— gradually recovered her usual health. The indistinctness of vision was relieved by a course of ferruginous tonics, alternating with the bitter infusions.

Remarks.—At the time of my first visit to this lady, circumstances prevented me making an examination, sufficiently thorough, to arrive at a correct diagnosis, and consequently I scarcely suspected the grave character of the dropsical effusion. I supposed it to be due in part to arsenical poisoning, in part, to the plethoric state of the sanguiferous system. When an opportunity of making a more thorough examination was afforded, the existence of the fœtus seemed to be involved in doubt. I discovered general anasarca and ascites, and was unable with the most careful exploration, to detect the sounds of the fœtal heart, the placental souffle, or to define the uterine tumour. On account of difficulties already explained, it was found impracticable to determine the state of the os and neck of the uterus, or practise the ballottement.

Was it not a case of amenorrhœa, dependent upon ovarian disease? The history of the case gave colour to this supposition: after the cessation of the menses, she suffered from grave disorder of the general health; she became much emaciated; had nervous symptoms analogous to chorea, and was treated for chorea by the civil physician consulted. In a doubtful case

the statements of a patient with regard to quickening and the fœtal movements cannot be relied on. A case occurred to me once of this character. A woman who had one child, which died, was extremely anxious to become *enceinte*. Her health was delicate, and she had frequent attacks of hysteria. At length the menses ceased and her abdomen began to enlarge. She had morning sickness. About the fourth month, she supposed she felt the "quickening," and from this time the fœtal movements were very active. Calculating the termination of her pregnancy from the last menstrual flow and the quickening, on the precise day thus determined, she took to bed with labour pains, sent for her friends, and had all the little paraphernalia in readiness for the event. When the pains became violent, her husband came for me. On my arrival I made the usual inquiries, and observing the regularity and activity of the pains, had no doubt that it was a case of genuine labour. However, upon making an examination, I discovered that the uterus was not impregnated, and, to the profound astonishment of herself and friends, asserted that she not only was not in labour, but was not pregnant. The shock of this communication and the mortification of having committed such an error, effectually reduced the size of the abdomen, and on the following day all external signs of pregnancy had disappeared. The woman died subsequently of general dropsy.

Remembering this case of "spurious pregnancy," and others of a similar character on record, I received with caution the statements of this lady about the movements of the fœtus. These doubts were founded in a just appreciation of all the difficulties of the case, and influenced the treatment. With the subsidence of the abdominal effusion, these doubts were resolved.

The dropsical accumulation in this case depended upon desquamative nephritis, one of the forms of the so-called Bright's disease. Whether this disease was induced by pregnancy, or whether it would have been developed without the occurrence of pregnancy, it is impossible to determine. As the health of the patient was perfectly good previous to the cessation of the menses, it is probable that the functional changes connected with pregnancy devolved an especial duty upon the kidneys which they were unable to perform. The injudicious use of arsenic may have contributed to this result.

The amaurosis in this case was an interesting incident, connected with the presence of albumen in the urine. The persistence of this symptom gave rise to serious apprehensions lest the functional disorder might terminate in organic lesion. The many hallucinations experienced arose from the muscæ volitantes and the distorted outlines of objects. These hallucinations were more frequent in the evening and night, when the additional obscurity in which objects lay rendered them more liable to misapprehension.

During the course of the disease, Mrs. ——'s mind was reduced to a state of imbecility—a derangement, functional, of the organs of the intellect,

as the amaurosis was of the optical apparatus. There was no evidence of uræmic intoxication, though the amount of urine secreted was extremely small at one period in the history of the case.

FORT RIDGELY, MINNESOTA, May, 1860.

ART. XI.—*Complete Inversion of the Uterus at Four Months of Utero-Gestation. Replaced Six Days after the Accident.* By E. W. WOODSON, M. D., of Woodville, Ky.

ON the 2d of Aug. 1859, I was called in consultation to see Mrs. G——, aged 27 or 28. Had been pregnant about four months. While engaged in washing, some distance from the house, violent labour pains came on, so severe that she could not get to the house. Being very much alarmed, and feeling the fœtus protruding through the vagina, she took hold of it, and with great force pulled it from her, bringing the uterus entirely out, thereby producing "complete inversion." Not understanding the nature of the accident, she forced the uterus back into the vagina, after tearing off most of the placenta, and did not call for medical aid until five days had elapsed. She then sent for her family physician, who had me called in as soon as he ascertained the nature of the case.

Upon examination, I found the womb barely inside the vagina, the fundus presenting externally, and about the size of a large pear, a portion of the placenta, almost decomposed, still adhering. I introduced my hand, (having no instruments with me), and attempted to replace it by making steady pressure against the fundus. Was forced to desist on account of the great pain produced by cramping of my hand. I ordered the vagina to be cleansed by warm, bland injections, gave an anodyne, and left her until next day. I then had an instrument made similar to "Simpson's Uterine Sound," except not so much curved, with a ball at the end, size of a half oz. bullet. Upon my second visit, I introduced the speculum and passed this instrument through it, placing the ball exactly against the fundus, and made steady pressure for some moments, when I had the satisfaction of feeling it give way, at first gradually, then suddenly with a jerk, the instrument passing up some two and a half or three inches. The pain was not very great, and the patient expressed great relief as soon as it was replaced. The loss of blood was not great or alarming, although it had continued from the time the accident occurred.

She recovered without a bad symptom, and much sooner than I expected. Her being remarkably robust and in excellent health previous to the miscarriage accounts for the favorable result.

TRANSACTIONS OF SOCIETIES.

ART. XII.—*Summary of the Proceedings of the Pathological Society of Philadelphia.*

1860. *May* 23. *Incised Wound penetrating the Thoracic Cavity and involving the Left Lung.* Dr. HARLAN exhibited this specimen.

A German, aged 22, was brought to the Pennsylvania Hospital on the evening of April 18th, with a stab above the left clavicle. The external wound was about an inch long; it was an inch and a half from the sterno-clavicular articulation, and its direction was upwards and outwards. There was scarcely any external hemorrhage. The patient was much prostrated; his pulse was feeble and frequent, and he was in an insensible condition, probably from the combined effects of prostration, fright, and excess of lager beer. The wound was brought together with lead sutures, and stimulants and opiates were administered. The next day his pulse and general condition had improved, but he complained of pain over the left side of the chest in front, and his respiration was rather frequent and short. Percussion over the left side of the chest was preternaturally clear in front, and flat nearly to the axillary line behind. The respiratory murmur on this side was very feeble, and the impulse of the heart could not be felt. On the 20th, percussion in front gave a decidedly tympanitic sound. The line of dulness extended slightly, and varied with the position of the patient. Unusually distinct egophony was heard beneath the left scapula. The heart was much displaced; its sounds could be heard most plainly to the right edge of the sternum, over the fourth costal cartilage. The respiratory murmur was still more feeble and distant on the left side, and puerile on the right. After this time the pulse became firmer; his general condition improved; the tympanitic sound became much less marked, and the respiratory murmur more distinct, though the line of dulness extended slowly. Loud friction sounds were heard with the impulse of the heart. The wound united by first intention, with the exception of a little suppuration from the points of suture which ceased entirely in a few days. It was surrounded for a time with slight swelling and redness but no emphysema ever appeared about it.

About the first of May, he became more feeble; he expectorated a thin, bloody fluid, which afterwards was followed by distinct pneumonic sputa. There was pain, dulness, and fine crepitation on the right side behind, and the line of flatness, on the left side increased with great rapidity until it reached the third rib, when the patient was sitting up. There was no cough at any time. Excessive prostration and dyspnœa were followed by delirium, and death took place on the 8th of May.

Autopsy.—The cicatrix in the skin was firm—scarcely distinguishable on the under surface. There was a small abscess containing about a drachm of pure pus beneath the skin and extending under the clavicle, but not connecting with the cavity of the chest. With this exception the track of the wound was entirely closed. The apex of the left lung for a space of three inches in diameter, was glued by recent lymph to the parts beneath the seat of injury. The whole left lung was completely hepatized with the exception of a slight crepitation at its upper extremity. It was compressed to

half its normal size, and its pleura was covered with a thick deposit of lymph. The pericardium was healthy within, but densely coated with lymph on the outside. The left side of the chest contained six pints of bloody serum and nearly two handfuls of black jelly-like clot. There was some effusion and other signs of pleurisy on the right side; its lower part was pneumonic. On account of the union of the wounded tissues, and the changes resulting from inflammation, the source of the hemorrhage could not be determined.

Tubercular Disease of the Walls of the Heart.—In exhibiting the specimen Dr. DA COSTA stated that the history of the case had been furnished him by Dr. C. C. Sherard, one of the residents at Blockley Hospital.

A coloured boy, fourteen years of age, was sent from the out wards to the medical wards, May 7th, 1860, having previously been an inmate of the house for several months. His history, as far as could be ascertained was, that he came into the house suffering from a disease of the elbow-joint, which was resected. Afterwards his arm was amputated below the shoulder-joint. The wound healed up readily and entirely. Whilst in the medical wards he complained of no pain whatever, but was very weak. He had a trifling cough, and seemed to suffer from some shortness of breath. Neither the heart nor the lungs were specially examined. The left side of his face was disfigured by a scrofulous tumour which involved the parotid, submaxillary, and sublingual glands. A large fistulous opening existed half way between the angle and symphyses of the jaw. The boy died on the third day after his admission, much prostrated.

Post-mortem examination twenty-four hours after death.—The glands of the neck were about the size of a hen's egg, exceedingly hard, and full of a whitish cheesy substance. They pressed on the jugular vein, which below the point of contact was very much enlarged. On the mucous membrane of the larynx were blackish deposits. The left lung was bound down by adhesions. A few small tubercles were found in the upper portion of both lungs. The walls of the right ventricle possessed somewhat more than their normal thickness. In parts no muscular substance at all remained, the entire wall having been converted into a yellowish or cheesy mass lined on each side by serous membrane. In other portions there was a thin layer of muscle. The right auricle was in the same state. The left auricle and ventricle were much hypertrophied; the wall of the latter measured in parts nearly three-quarters of an inch; here and there only it contained a few deposits. There were more in the left auricle. The endocardium was smooth; but from the lining membrane of the lower portion of both ventricles sprang delicate villous growths. The valves were sound.

The papillary muscles did not seem to have been involved in the disease. The pericardium was in a few spots slightly raised by the deposits under it; but the membrane itself was not roughened. It was only at the back of the right ventricle, and near the auricle, that there existed a few scattered tubercles on the surface.

Microscopically examined, the muscular fibres on the right side were found to be very granular, their markings indistinct; some of them were covered with oil drops. The latter were also detected in the yellowish masses, in addition to granules, and many small non-nucleated cells. No fibrous tissue was seen under the field of the instrument.

The liver was enlarged, and presented the appearance of the ordinary nutmeg liver. The intestines were healthy. The kidneys, like the spleen, were somewhat increased in size, but not otherwise altered. In the abdo-

minal cavity was considerable fluid; so, too, in the ventricles of the brain, the substance of which was soft. Yet neither there, nor in its coverings, were there any tubercles. The main interest in this case centres in the heart. It furnishes an instance of scrofulous or tubercular disease of that organ, a morbid state of extreme rarity. Dr. Da Costa stated that he had met before with cases of tubercle of the pericardium, but never with tubercular formation in the walls of the organ. It was strange that the pericardium should have been so nearly healthy. In most of the cases of tubercle of the heart recorded (and they are not many), the morbid matter is formed on the external surface, and then becomes gradually imbedded in the muscular substance. The pericardium bears almost always the brunt of the disease.

Another remarkable circumstance in the case presented was the comparative absence of tubercular depositions in the lung. It is true, a few scattered tubercles were encountered in the organ, but they were exceedingly minute, and evidently of very recent formation, much more recent than those on the heart.

Circumscribed Sloughs of the Arm inducing Hemorrhage, and necessitating Amputation through the Shoulder-joint.—Dr. HARLAN presented this specimen, obtained from Patrick Martin, an Irishman, aged 19, who was admitted to the Pennsylvania Hospital on the 26th of March. He stated that about two weeks before that date, his right arm had become stiff, swollen, and painful on motion. Previously to this time he had been constantly at work in a blacksmith shop, where he had been employed for two years, and had enjoyed perfect health with the exception of an abscess on the back of the hand, which had nearly got well when the swelling of the arm commenced. At the time of admission, there was a swelling on the upper and inner part of his right arm, quite tense, and of a dark-red colour, and having so much the appearance of an abscess, that the diagnosis was at first doubtful. In a few days the skin became more livid, and small openings formed in it. A probe introduced into one of these could be passed for nearly its whole length in any direction. The skin was now freely divided on a director, and a yeast poultice was applied, which soon brought away a large slough of cellular tissue. After this there was profuse suppuration from between the muscles of the whole upper-third of the arm, the skin retracted and sloughed at its edges, leaving a large, raw surface, and the sloughing extended into the axilla, and even behind the scapula and beneath the pectoralis.

The axillary artery could be felt apparently covered only by the sheath. Tonics and stimulants were freely administered, and a wash of chloride of zinc was applied to the arm and injected into the axilla. Great improvement in the appearance of the parts and the character of the suppuration followed the use of the chloride of zinc, the edges of the skin united to the tissue beneath; granulations sprang up, and the patient seemed to be in a fair way for recovery. On the 25th of April there was quite a copious hemorrhage of bright arterial blood from the axilla. The stream was not large enough to come from the main artery and the pulse at the wrist was not affected. The hemorrhage was temporarily stopped by the application of lint saturated with a strong solution of Monsel's salt, and a consultation of the surgeons of the hospital was called. As the source of the hemorrhage could not be discovered, and the limb was thought to be disorganized beyond the probability of recovery, it was determined that the patient's only chance was in amputation at the shoulder-joint, which was immediately performed by Dr. Pancoast. Nineteen vessels in the stump required ligatures. For additional security the main artery was tied several inches higher up.

The muscles of the arm are much softened—their colour is very dark, and in many places the fibres cannot be traced. The cellular tissue has nearly all disappeared from the inter-muscular spaces, and black clots are found there. The brachial artery is unusually small, but apparently perfectly healthy.

June 13. Dr. HOYT reported a case of *valvular disease of the heart and acute nephritis.*—A woman, about 40 years of age, had for some years been subject to paroxysms of dyspnœa and habitual oppression, which the reporter attributed to mitral disease. In October, 1858, she experienced several attacks of paralysis of the right side, occurring in close succession, with loss of speech. She soon regained the use of her limbs, but articulation continued impaired, and she suffered pains in the limbs which had been paralyzed. In March, 1860, another paralytic attack occurred, rendering deglutition difficult. The patient recovered from it, but was still feeble, when, on the 17th of May, she was seized with a violent pain in the right lumbar region, which was also aggravated by pressure. Her condition improved until June 1st, when the lumbar pain returned, but with less severity than at first, and she died on the 5th.

The heart was double the normal size, and its walls were hypertrophied. The mitral valve was much thickened, and the tricuspid in a less degree. The right kidney was a little smaller than natural, and exhibited on its posterior surface two whitish patches a little over an inch long, and somewhat less in width, raised above the surface of the organ, and about one-third of an inch in thickness. The rest of the kidney was somewhat redder than usual. Examined under the microscope, by Dr. Woodward, the white patches were found to be composed principally of lymph corpuscles together with a large quantity of oil globules. The tubuli uriniferi were readily seen throughout the deposit.

Cancer of the Rectum.—In calling the attention of the Society to this case, Dr. PACKARD remarked that he was indebted for its history to Dr. Reese: "Mr. J——, aged 48, a planter, living on the Mississippi between Natchez and Vicksburg, medium height, and stout built. Had enjoyed good health (with very few exceptions) until about eighteen months ago. He came under my care first, about a year since, and had then been suffering for some months with a moderate diarrhœa, attributed by himself to exposure to the wet, on his plantation. On careful examination he presented as follows: *skin* natural; *pulse* very slightly accelerated, but generally normal; tongue moist and slightly furred, *not at all red; abdomen not painful* on pressure; stools numbered four to six a day; for the most part quite natural in appearance, with the exception of being too thin. There was never any pain either *preceding* or *during* the evacuations. The only uneasiness the patient ever complained of, on the closest questioning, was a dull undefined soreness in the cavity of the pelvis which he felt, chiefly in the sitting posture, but which was very much relieved by reclining on a couch. This sensation of soreness was chiefly complained of some months before his death, and *passed entirely away* for at least eight or ten weeks before the close. The most careful manipulation could elicit no evidence of any enlargement of the liver or spleen, or of the existence of a tumour of any sort. There was never the slightest sign of anything like *stricture of the bowels*, though occasionally a slight attack of *hæmorrhoids*. The patient frequently complained of some difficulty in his *urination*, occasioning him to empty his bladder quite frequently, and with some delay; but as he was always relieved by mild diuretics, and as the

secretion presented nothing specially abnormal, it did not occasion any particular anxiety.

The appetite was, until nearly the last week of his life, *very good.* His *diet* was very carefully managed—being nutritious and digestible—wine and brandy being allowed as required.

The *treatment* need not be detailed. Every plan that my own judgment—aided by that of the gentlemen who at different times saw him in consultation—could suggest was tried, but without much apparent benefit. He continued to emaciate almost *from the first*—in spite of the fair amount of nutriment that he took—and to an extent that the number of dejections would hardly justify. This circumstance, conjoined with a peculiar aspect of countenance, awakened in us some suspicions of organic malignant disease, although we generally were inclined to the belief of the existence of *chronic ulceration* of the bowels.

About forty-eight hours before his death (June 3d), the action of his bowels suddenly ceased without any assignable cause. The peristaltic movement appeared to be reversed. Nausea and vomiting occurred very frequently—being afterwards followed by constant regurgitation, without nausea. *Nothing could possibly be made to remain on the stomach.* The matter ejected was at first bilious—afterwards dark—but neither bloody nor fecal.

Injections of a stimulating character were repeatedly used, with the hope of acting upon the bowels and relieving the distressing regurgitation. Attempts were likewise make to procure the endermic action of morphia; but without any impression, until half an hour before death, when the bowels were moved. But the exhaustion and prostration of the patient were too great to admit of his rallying, and he finally sank under their power."

The *autopsy* was made by Dr. Packard, assisted by Dr. Reese, thirty-six hours after death. Body much emaciated.

Abdomen only examined. The great omentum formed a band corresponding quite closely to the linea alba; it was firmly adherent below to the pelvic viscera. The *liver* was very large and fatty; the gall-bladder very greatly enlarged, being distended with gall-stones, four of which were of enormous size and cylindrical shape, while the others were small and irregularly disposed. The *kidneys* were large and fatty; the supra-renal capsules healthy.

The *intestinal tube* seemed healthy until within about three inches of the anus, where a very large mass of cancerous disease bound the rectum and bladder firmly together. On laying open the thick walls of the rectum, the diseased portion was found marked off by a decided irregular line, below which the whole inner surface of the gut was raised and uneven. The consequent rigidity of the walls had not led to any contraction of the orifice, so that there had been no stricture during life. The *bas-fond* of the bladder was also the seat of very extensive adventitious deposit.

June 27. Transposition of the Arteries.—DR. JNO. F. MEIGS presented a specimen of this taken from a male child, born at full time, on the 30th of April, 1860, under the charge of Dr. Ellwood Wilson, of this city. The labour was easy and natural in all respects. At the time of birth the child cried immediately on entering the world, but not with full vigour. Its general development was good. It might have weighed, at a guess, from 7 to 8 pounds. Dr. Wilson noticed nothing unusual in the appearance of the infant, except that its cry was neither so vigorous nor so sustained as is common. No discoloration was then observed. It was washed and put to the breast at once, and nursed well.

The child continued to nurse well, its bowels and kidneys acted naturally, and nothing beyond its seeming rather weakly was remarked until the twelfth day after birth, when, as the grandmother was preparing to wash it, it had what was supposed to be a convulsion. On the following day Dr. Wilson was called, when he found it with cold extremities, shrunken features, the surface generally pale, but with marked lividity about the mouth and eyes; the pulse was very feeble and rapid, so much so as to make it impossible to count it; the respiration was moaning and sighing. It could still nurse. The treatment directed was perfect rest on the right side, with the head and shoulders elevated, and twenty drops of brandy in water every two hours.

From this time it became gradually weaker; the moaning respiration was more marked, the nursing more imperfect, and the shrinking and discoloration of the surface more decided. During the last three days of its life the fingers and toes became quite livid or purple, as also the parts around the mouth, whilst the remainder of the surface was not particularly changed. It had no convulsions, but was very drowsy towards the last, and threw its arms about as a child does when restless. It died on the forty-fourth day after the birth.

I saw the patient once, on the twenty-seventh day, when I noted the following conditions:—

The child was small for its age; its lips and mouth were slightly, and but slightly cyanosed; elsewhere the complexion was good. Breathing short, high and frequent. On uncovering the trunk of the body, it was easy to observe that the act of inspiration lifted up the sternum and other regions of the thorax, whilst the lateral regions of the chest failed to expand at all scarcely, and the base of the thorax actually became smaller, giving to the waist of the infant the appearance of being drawn in circularly by some internal force, or of being driven in by an exterior pressure.

On percussion the chest was less resonant than natural, on both sides, but especially on the right; the percussion-sound was positively dull on the right side, both before and behind.

The vesicular murmur was puerile, except over the right side, where it was feeble.

Cardiac sounds decidedly louder at right scapula than over left. The cardiac impulse of the left nipple was very indistinct, and the sounds there feeble but natural. The natural tic-tac could be heard. On pressing two fingers lightly to the left of the ensiform cartilage, close to the costal cartilages, a very distinct and quite vigorous impulse could be felt, one much more distinct than at the nipple. At this point a distinct blowing sound attended the systole of the heart.

The diagnosis made at the time was: atelectasis of both lungs, of right greater than left; dilatation with hypertrophy of right ventricle, obstruction of the pulmonary artery, and open foramen ovale.

The action of the heart was regular, and the pulse frequent.

Autopsy.—Body quite small, not larger than that of many new-born children; very thin. Thorax arched at the sternum. Costal cartilages of right side thrust abruptly forwards at their points of junction with ribs, so as to give a deformed aspect to the right side of chest. Left costal cartilages also thrust forwards, but not to same degree as right. This peculiarity gave to the lateral regions of thorax a curiously flattened and contracted appearance. The base of chest was contracted in all its diameters, as though drawn or driven in.

On removing the sternum, the lungs were seen to be withdrawn from the

anterior portions of the thorax, so that the heart was almost entirely exposed. This withdrawal of the lungs was observed especially in regard to the lower lobes of both sides; these were quite hidden within the depths of the chest. The upper lobes, though small, were more fully in view and more filled out.

On taking out the lungs, they were seen to be very small. Their colour was, in general, quite too pale. Certain parts, to be referred to presently, were, on the contrary, of a dark livid or brown tint. The upper lobes, or at least the upper parts of the upper lobes, were crepitant and well expanded. The inferior lobes on both sides were small, and firmer and less crepitating than natural. The anterior halves of both lower lobes were firm, non-crepitant, and of a dark purplish tint, evidently quite without air. A pipe was passed into the trachea, and air driven into the lungs from the mouth. As the effort was made, it was interesting to see how rapidly and completely the whole of both organs rose to their full size. The dark, collapsed portions of the lower lobes, in particular, assumed apparently twice their previous size, changing their dark colour as though by magic, in exact proportion as they rose out into full size, under the influx of air, from a dull purple to a light pinkish hue, and becoming perfectly light and elastic. Not only, however, the inferior, but also the superior lobes became greatly expanded in volume, showing, by the contrast, how great had been the previous collapse of all parts of the lung-tissue, and suggesting instantly the thought that in their expanded state the lungs ought to receive a very much greater amount of blood from the heart than they could have received in their previously small and collapsed condition, and leading me to ask whether the imperfectly expanded lung-tissue of atelectasis might not itself be, in some cases, quite as powerful in preventing the emptying of the right ventricle as a contracted pulmonary artery, the most frequent lesion met with in fatal cases of cyanosis.

The heart, as it lay *in situ*, was unusually large for so small a child. I think I am safe in estimating it as one-half larger than it should have been. The whole organ was full, rounded, and all the cavities distended. The right auricle was particularly full, and very considerably larger than the left.

On opening the heart, all the cavities were found filled with soft black coagula, lying loosely amongst the tendinous cords and fleshy columns, but not adherent or strongly intertwined with them. They were all easily washed out.

The right ventricle was opened first. Its walls were very thick, and its cavity quite small. It presented the appearance we usually associate with the left ventricle. Its walls were thicker than those of the left ventricle.

The walls of the left ventricle were thinner than those of the right, and of about the thickness we might have expected to find them. Its cavity was much more capacious than that of the right. The auricles presented nothing unusual, except that, as above stated, the right was dilated so as to be considerably larger than the left. The foramen ovale presented an opening at its lower aspect of about two or three lines in diameter. The orifices of the venæ cavæ appeared smaller than usual.

The aorta and pulmonary artery were transposed. The aorta arose from the right ventricle in the usual position of the pulmonary artery; the pulmonary artery arose from the left ventricle, and, passing under the arch of the aorta, gave to the latter, just beyond the left subclavian, the ductus arteriosus, which was quite pervious, and of considerable size.

The valves of the heart were healthy, and not transposed, as has sometimes been found to be the case in hearts presenting transposition of the arteries.

Pulmonary artery of the natural size; no obstruction at its point of origin. After giving off to the aorta the ductus arteriosus, it divided, as usual, into two pulmonary branches, which soon subdivided into others.

The aorta was of the full size, and presented nothing unusual. It gave off at its arch the innominate artery, and then the left primitive carotid and the left subclavian. Just beyond the latter it received, from the pulmonary artery, the ductus arteriosus.

Pericardium natural and healthy.

Remarks.—The kind of malformation of the heart, of which this specimen is an example, is of less frequent occurrence than several others. Dr. Peacock, in his excellent lectures on the malformations of the heart, cites 16 examples of this particular kind, while he quotes 49 cases of contraction of the pulmonary orifice with imperfect septum cordis, and 12 of the same contraction with open foramen ovale. He also cites 20 cases of impervious pulmonary artery; 11 cases in which the heart consisted of only one ventricle with one or two auricles, and 5 cases in which the heart is said to have consisted of a single auricle and ventricle.

It will be remarked by all who have heard the report of this case, that the cyanosis, which is so generally looked upon as the one special symptom of malformation of the heart, was not very strongly marked. The symptoms were rather those of atelectasis, or imperfect expansion of the lungs, with the general debility and faulty nutrition usually attendant upon that state, than those of a very high degree of obstruction of the circulation. There was, at no time, that deep livid discoloration of the whole surface, which has given to this condition the title of morbus cæruleus, nor did the child exhibit, except on one occasion, and then only for a short time, the convulsive phenomena which so frequently attend upon strongly marked cases of faulty and embarrassed circulation.

And yet, the circulation was in the highest degree defective. But for the permanence of the two fœtal characteristics, the foramen ovale and ductus arteriosus, we should have had the curious spectacle of the lesser and the greater circulations, the pulmonic and the systemic, going on in two constant rounds, without any communication. The systemic blood, brought to the right side of the heart by the venæ cavæ, instead of passing on to the lungs by the pulmonary artery to be revivified, would have returned at once to all the parts whence it had just arrived, through the aorta, which arises from the right ventricle. The pulmonic blood, arriving at the left side of the heart by the pulmonary veins, would have issued again, through the pulmonary artery which arose from the left ventricle, towards the parts it had just quitted; and, so, the tissues of the system at large would have been bathed in a constant stream of venous, whilst the capillaries of the lungs would have presented to the air in the air-cells naught but an arterialized blood. Every round of the systemic circulation would have brought to the expiring tissues a more unwholesome element, while to the air in the lungs would have been exposed at each circuit of the

pulmonic blood, a fluid so rich in its qualities as to need no longer that life-giving contact so essential in the normal condition of the body.

Extra-uterine life, under such conditions, would have been impossible for more than a very few moments. The infant must have perished after but a few inspirations.

But life was maintained for the long period of 44 days. And this only by the permanency, as mentioned above, of the two fœtal openings—the foramen ovale and ductus arteriosus. These two openings, instead of being hurtful, as might, upon a casual glance, seem probable, were, in truth, the only means by which a communication between the two circulations could be preserved. A portion of the systemic blood passed through the foramen ovale, to the left side of the heart, and thence to the lungs; of the oxygenated blood brought to the heart by the pulmonary veins, a part, at least, glanced off, through the ductus arteriosus, to the system at large. The foramen ovale becomes, so to speak, the pulmonary artery, and the ductus arteriosus assumes the office of the aorta.

Let us consider, for a moment, the bearing of this case upon the doctrines of the causation of cyanosis, or the discoloration of the body in malformation of the heart.

Two theories, as is so well known, have divided authorities upon this matter: one is that the discoloration depends upon the admixture of the two kinds of blood; the other that it is the result of a stasis in the venous system from obstruction.

Amongst the advocates of the former theory may be cited Senac, Corvisart, Caillot, Labat, Bouillaud, and particularly Gintrac; whilst among those who adopt the latter opinion may be named Morgagni, Louis, Berard, Bertin, Ferrus, and Dr. Moreton Stillé, of our city. Of those who hold the latter opinion, allow me to say there is not one who maintains his opinion with greater success and ability than Dr. Stillé, whose inaugural essay is one of the most exquisitely complete monographs on a medical subject that I am acquainted with. It was published in the July number of the *American Journal of Medical Sciences* of the year 1844.

The opinion now generally held is, that the cause of the discoloration is stagnation in the venous system, from obstruction in the heart or lungs. Some, however, who maintain this view in great measure hold, nevertheless, that the mingling of the two kinds of blood assists in the production of the phenomena of the disease, by increasing the intensity of the discoloration. Dr. Peacock, whose lectures on malformations of the heart are invaluable for their ability and research, and who adopts the congestive theory, thinks that Dr. Stillé limits the cause of the obstruction too strictly to the heart and its great vessels, and holds that collapse of the lungs is sometimes a principal cause of obstruction in certain cases. I think, however, that Dr. Peacock somewhat misunderstands Dr. Stillé, for though the latter does not refer to collapse of the lungs as a cause, he expressly states

that he looks upon obstruction of the pulmonary artery as the *type* of the causative condition, and not as the only cause.

After these prefatory remarks, let us turn to the case before us. In this instance, the cyanotic hue, and the other symptoms of embarrassed circulation, were scarcely observed for several days after birth, and at no time did the child present the deep discoloration, the dyspnœa, or the convulsive phenomena which usually attend upon serious congenital malformations of the heart. And yet there must have been present, from the very moment of birth, and while life endured, a very great admixture of venous and arterial blood. The arch of the aorta contained almost purely venous blood. Unless, indeed, we suppose that a portion of the imperfectly arterialized blood of the ductus arteriosus retrograded along the aortic arch to reach the great vessels springing from that arch, we must suppose that the aorta at that point contained nothing but the blood which had already made the round of the systemic circulation. Whether we grant this or not, it is clear that in the descending aorta, the blood of the right ventricle must have commingled with that which arrived from the left ventricle through the ductus arteriosus. And, if we consider for a moment the state of things in the left side of the heart, we shall find that even here, there must have been admixture; for, in the left auricle, we have not only the decarbonized blood brought from the lungs by the pulmonary veins, but also a very considerable portion of the carbonized blood which had arrived in that cavity through the foramen ovale. Indeed, it was through the foramen ovale alone, that the venous blood was able to reach the lungs. We have, therefore, the curious condition of a left heart containing both blood just returned from the lungs, and blood from the systemic circle. This, pouring out into the pulmonary artery, passes into the systemic vessels, as the best which the body affords, and partly again to the lungs, to become again renewed; so that the admixture must have occurred in a very high degree, and yet there was a sufficient change effected in the lungs to prolong a low kind of vitality during the period of forty-four days.

We may conclude, then, that what cyanotic symptoms existed in this case, could not have depended on admixture of the two kinds of blood, else the symptoms should have appeared at the moment of birth, and should have been much more decidedly marked.

This leaves us only the other theory, that of venous congestion, by which to explain the cyanotic phenomena exhibited in the case.

That a condition of venous stasis existed in the case, is proved, in my opinion, by the following considerations:—

The blowing sound heard with the cardiac systole, during life, must have been, from its seat, the result of tricuspid regurgitation; the impulse of the right ventricle, as compared with that of the left, was abnormal in force, and presupposes some obstruction to the escape of the contents of the ventricle; the concentric hypertrophy, with the very small cavity of the right ventricle, point, also, to some obstacle resisting the escape of the blood

from the ventricle, and, lastly, the dilatation of the right auricle with the open foramen ovale, shows an unusual distension of that cavity, and a consequent repletion of the whole venous system.

We have now to determine what was the nature of the obstruction in the venous system, if an obstruction existed.

There was no contraction of the aortic, nor of the tricuspid orifice, to explain the venous stasis.

The atelectasis of the lung-tissue could not have acted directly upon the blood in the right side of the heart, as it does, I doubt not, where the pulmonary artery has its normal origin, since in this case that vessel arose from the left instead of the right ventricle, and any obstruction to the transit of the blood through the lungs must have reached upon the left ventricle, and could have affected the right ventricle and thence the venous system at large only secondarily, in the same way that the ordinary obstructive diseases of the left heart of the adult are known to affect the right heart through the medium of the lungs.

Where then was the seat of the obstruction which impeded the escape of the blood from the right heart, and thus gave rise to the cyanotic symptoms, if such can be found? I think it is to be found in the systemic capillaries.

It is a well established fact that the capillaries of the systemic circulation, like those of the pulmonic, resist the passage of a highly carbonized blood. This has been clearly shown by various experimentalists during their researches into the phenomena of asphyxia. Now, in the case before us the systemic capillaries could have received nothing but a very imperfectly oxygenated blood. As already stated above, the aorta, behind the ductus arteriosus, contained only venous blood which had already made the circuit of the system, while beyond that point, though it received from the duct a small accession of blood, a part of which had just returned from the lungs, the general mass of the blood in the descending aorta must have been venous, and therefore unfit to pass readily through the systemic capillaries. To this point, therefore, the systemic capillaries, I am disposed to refer the seat of that obstruction to the escape of blood from the right heart, which must have given rise to the venous stasis occasioning the but moderate cyanosis observed in this case.

A peculiar Fungus observed in Saccharine Urine.—Dr. JAMES DARRACH read the following paper on this subject:—

Fungi have been recognized growing in urine by many observers, and some writers have attached considerable importance to them as indicators of the existence of sugar in that fluid, while others ignore their value as diagnostic of this abnormal constituent. This difference of opinion arose no doubt from a very imperfect knowledge of the subject, as the following extracts indicate.

The first, from Dr. Golding Bird's work on the urine, is as follows:—

"When the urine contains but very small portions of sugar, too little even to

affect its specific gravity materially, or to cause it to assume a diabetic character, certain phenomena are developed, connected with the production of the genus torula or saccharomyces, which will at once point out the presence of sugar. These indications are of very great value."

The author further remarks:—

"When saccharine urine is left in a warm place, a scum forms on its surface, as if a little flour had been dusted upon it. This consists of minute oval bodies, which soon enlarge from the development of minute granules visible in their interior. These continue expanding, and dilate the oval vesicle containing them into a tubular form; soon afterwards the internal granules become larger and transparent, and project from the exterior of the parent vesicle like buds. The whole then resembles a jointed fungoid or confervoid growth, which ultimately breaks up, and a copious deposit of oval vesicles or spores fall to the bottom. All these stages of development require but a few hours for their completion."

The following is an extract from one of Dr. Bence Jones's lectures on the urine:—

"Torulæ are by no means diagnostic of saccharine urine; but though they form very soon and very plentifully in diabetic urine, yet they may constantly be found in urine which contains no trace of sugar; and though they may lead you to look for sugar, they must never lead you to assert that sugar is certainly present in the urine in which they are."

It would be impossible to discover what fungus Dr. Bird means, for his description might apply to the "*penicillum glaucum*" as to any other, and the figure of the plant which is found on page 279 (second American edition) does not relieve us from the difficulty; while there is no doubt in our minds that it is the penicillum to which Dr. Jones refers. And so far we agree with him, that this fungus is not to be taken as diagnostic of sugar in the urine, and that it grows in non-saccharine as well as in saccharine urine.

Dr. Hassall was the first to clear up the confusion on this subject by making known that there were two very distinct fungi which grow in the urine, one of which may be found in any acid urine, while the other is only seen in such as contains sugar. The former is the well-known "*penicillum glaucum*," while the latter is considered by Dr. Hassall as identical with the yeast fungus, formerly known as the torula cerevisiæ. I have not as yet been able to satisfy myself by personal observation with regard to this identity. Its aerial fructification certainly differs widely from the representations of the torula as exhibited in the works of the highest authorities. The uncertainty as to the genus of the plant, however, does not affect its value as a diagnostic sign, for any one who has seen the *sugar fungus*—as we shall call it—will have no difficulty in recognizing it as a distinct plant from the penicillum.

My attention was first attracted to the sugar fungus between four and five years ago; at that time I did not recognize it, though having taken a drawing of it, I have since been able to identify it with the sugar fungus of Dr. Hassall. I then saw the plant only in its stage of thallus or mycelium. Two years ago, while attending an old lady for fracture of the clavicle, I again had an opportunity of seeing it; and as the manner in which I was

led to observe it will serve to illustrate the practical nature of Dr. Hassall's discovery, I will briefly relate the details. While attending this lady for the fracture, she directed my attention to the fact that she had been compelled to pass her water more frequently than natural, often having to rise at night for this purpose. I immediately inferred that this condition was owing either to an abnormal condition of the urinary mucous membrane or to an irritating quality of the urine. I obtained a specimen of the urine, but did not examine it for two days, when I observed that it was filled by a dense cloudy microid mass. Microscopic examination exhibited that it consisted of the mycelium of what now I had become acquainted with—the *sugar fungus*. And although neither the quality nor the colour of the urine, nor the general symptoms of the patient had directed my attention to the existence of diabetes, I now felt certain of the presence of sugar in the urine; and this view was confirmed by obtaining a large quantity of it from another specimen of the fluid which I obtained subsequently, the sp. gr. of which was 1040.

The appearance of the *penicillum glaucum* is familiar to all. This fungus grows readily in any acid urine, and according to Dr. Hassall, more particularly affects albuminous urine; and he remarks that "it affords some indication of the amount of animal matter contained in acid urines."

It has three stages of development, spore, mycelium, and aerial fructification. To have the plant develop itself throughout all three stages the urine must remain acid. Often it will be observed to become arrested at its spore state or at the mycelium stage, and then desintegrate. This is owing generally to the fact that the urine though acid at emission has not remained so. The first two stages of growth are completed under the surface of the fluid; but the second, which consists in the production of straight upright filaments bearing at their extremities the bunch of spores is completed in the air.

The same steps of growth are observed in the development of the *sugar fungus*, and the same conditions are necessary for its growth, viz: oxygen, acidity of urine plus a saccharine material.

The difference between the two plants above mentioned will be better appreciated by an examination of the accompanying figures. The drawings were made with a power of about four hundred diameters, and exhibit sufficiently the distinction between these two fungi. Throughout all their stages this difference is manifest. The size and appearance of the spores and filaments of the mycelium differ greatly, and if doubt existed as to their being distinct species, one has but to examine them in their complete aerial development, when the round globular head of the sugar fungus and the irregular digital bloom of the penicillum no longer leave grounds for mistaking one for the other. I did not make accurate measurements of the plants, intending to do so on a future opportunity. Dr. Hassall gives the following measurements: The spores of the penicillum glaucum vary in size, "from the $\frac{1}{17\,7\,8}$ of an inch in diameter to the $\frac{1}{11\,2\,3\,3}$ of an inch."

The sporules of the sugar fungus vary from the $\frac{1}{1900}$ of an inch in diameter to the $\frac{1}{625}$ of an inch. I have not pretended to give a full account of the development of these plants, but would refer those who are interested in the matter to Dr. Hassall's beautifully illustrated paper, in vol. xxxvi. of the *Medico-Chirurgical Transactions*.

Fig. 1.

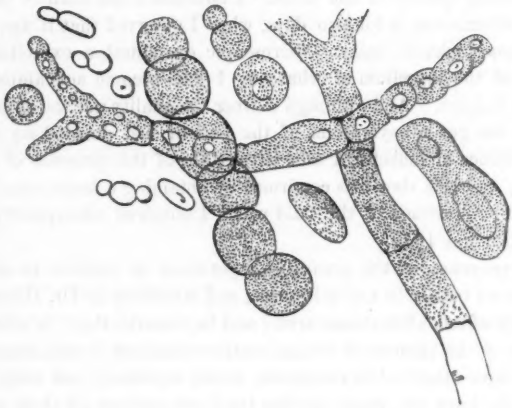


Fig. 2.

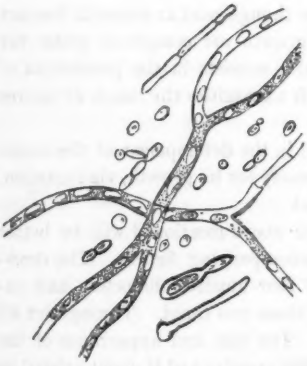


Fig. 3.

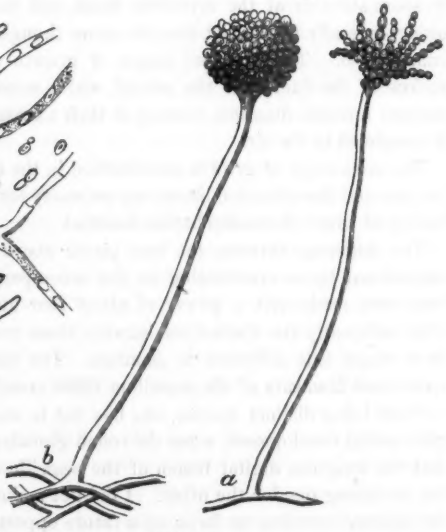


Fig. 1, represents the spores and mycelium of the sugar fungus.
Fig. 2, the penicillum glaucum in various stages of growth, from the spore to the mycelium.
Fig. 3, *a*, the penicillum, and *b*, the sugar fungus, in full aerial fructification.

REVIEWS.

ART. XIII.—*The Nature and Treatment of Gout and Rheumatic Gout.* By ALFRED BARING GARROD, M. D., F. R. S., &c. &c. London: Walton & Maberly, 1859. Royal 8vo. pp. 601.

IF we estimate the importance of a disease by the amount of attention given to its investigation, we cannot fail to award a high position to gout; for among those abnormal conditions of humanity which from the commencement of scientific medicine have engaged the thoughts and labours of physicians, we find the disorder in question studied with an enthusiasm and perseverance rarely given to the more humble infirmities to which the mortal frame is liable.

But a cause has existed (and, in a great measure, still exerts an influence) well calculated to attract the special attention of the scientific investigator to the study of gout, and this resides in the essential nature of the disease itself—its etiology, the protean forms of its attacks, its insidiousness, the obscureness of its pathology, and, above all, the obstinacy with which many of its phases resist treatment. Thus, in reference to this latter point, whilst it is doubtless true that an ordinary attack of acute gout may generally be made to disappear under appropriate treatment, it is nevertheless a fact that but little progress has been made during the last two thousand years in the rational management of either the chronic or rheumatic forms of the disease, and that, therefore, these varieties are almost as invincible as when Hippocrates lamented the inefficacy of all medical treatment, or Lucian, by citing satirically some fifty remedies from the animal, vegetable, and mineral kingdoms of nature, evidenced how little confidence he had in any of them as remedial agents.

For centuries the nature of gout was left to speculation, and it is only within our own time that any real advancement has been made towards a knowledge of its pathology. By establishing the fact that the seat of gout is essentially in the blood, a step has been taken in the right direction, the advantages of which we cannot refuse to acknowledge, perceiving, as we do, that practical results of the highest importance are likely to be derived from it.

Neither must we neglect to accord to Dr. Garrod the credit which is so justly his due for the prominent part he has taken in the scientific investigations which have thrown so much light upon a subject where not long since all was conjecture. For the past twelve years he has laboured with an assiduity worthy of the highest commendation, and although we must award to Strahl and Lieberkuhn the merit of having first detected uric acid in the normal blood of animals, the author of the treatise before us was undoubtedly far more successful in this line of research than the observers above mentioned, who failed altogether to discover the substance in question in human blood. We shall return to this subject in the course of our remarks, when we come to consider the pathology of gout.

The volume which we propose to notice is intended as a systematic mono-

graph on the disease which forms its subject, and therefore, unlike many of its predecessors, is not restricted to the dissemination of the peculiar views of its author, either as regards pathology or treatment. There is nevertheless sufficient originality about the work to distinguish it from mere compilations; and as the matter giving it this feature is both scientifically and practically of excellent quality, we are glad to recognize in the fruit of Dr. Garrod's labours a treatise deserving the highest commendation of the profession, a learned dissertation, a safe and perspicuous guide, and—what we are even somewhat disposed to regard as a still higher recommendation—a work containing many valuable suggestions for those who may be disposed to carry their studies in the same direction as the author. If, therefore, after what we have said, we should, in the course of our examination, find individual features in Dr. Garrod's book from which we should feel conscientiously bound to withhold our approval, we shall not, we trust, run the risk of being considered captious or hypercritical. It is impossible for an author to please every one, and perhaps even the identical statements and characteristics in the work before us, which we cannot receive or commend, may call forth the highest encomiums from some other critic, whose individuality is more consonant than our own with that of Dr. Garrod.

Passing over the first chapter of the work, which is devoted to the history of gout, and in which considerable literary research is displayed, we come to the second chapter, which treats of the acute form of the disease, as it ordinarily runs its course. We need not detain our readers with this portion of the treatise. We will remark, however, that Dr. Garrod's description of a paroxysm of gout is, as we had every reason to expect, exceedingly graphic. Scudamore's table relative to the comparative frequency with which different parts of the body are primarily affected is quoted. This table is based upon 516 cases of gout. Of this number, 341 cases occurred in one or both great toes alone, and 373 cases in the great toe and some other part. After the great toe, the ankle would appear to be next most liable, then the instep, next the outer side of the foot, and afterwards the knee. Dr. Garrod states that his experience enables him to confirm Scudamore's observations relative to the peculiar liability of the great toe to gouty attacks, a proclivity which is not, we believe, disputed. The chapter under notice contains the details of several cases in illustration of points of interest. The following we quote in full, because of its instructive character, and also because we have reason to believe the author's diagnosis was erroneous.

Speaking of the fact that occasionally genuine gout occurs primarily in some other part of the body than the great toe—this member remaining free from the disease during the whole course of the paroxysm—and of the great difficulty, in such cases, of forming a correct diagnosis, Dr. Garrod relates the following instance:—

"October, 1858.—H. P., a male, aged 38, came under my care in the hospital, on account of severe suffering in both ankles. It appeared, from the history of the case, that his father had been greatly afflicted with some joint affection, to such an extent as to cause him to be bedridden for sixteen years; it was considered to be rheumatism. The patient, when fifteen years of age, had an attack of what appeared to be rheumatic fever, affecting the wrist and other joints of the upper extremities; seven years after this first attack he had a second of similar character, but implicating the lower extremities also. From this time to his admission he had suffered at four or five different periods, the disease generally assuming a chronic form, and rendering him helpless for months. He cannot remember that the ball of the great toe was ever implicated. By occupation he is a cellarman, and is exposed to cold and damp; he takes on an

average, each day, at least four pints of pale ale or other malt liquor, and sometimes a considerable amount of wine. On admission both ankles were very painful and tender, but not swollen or red. He is unable to flex them, and the least attempt to do so is accompanied with much pain. The attack has been present three weeks, and at the commencement, from the patient's own account, the joints were swollen and red; pulse 72; tongue but slightly furred, and no thirst; appetite moderate; bowels regular; no perspirations. The pain in the joints was somewhat increased at night. The urine was scanty, sp. gr. 1030, giving rise to some crystalline deposit of uric acid on standing; no albumen present. As there was some doubt as to the real nature of the disease, about two ounces of blood were taken from the arm, and the serum exhibited the presence of a moderate amount of uric acid when treated by the thread experiment detailed in a subsequent chapter.

"A draught containing four grains of iodide of potassium in camphor mixture, was also prescribed, and middle diet ordered. Four days afterwards the patient remained in much the same state. The joints were somewhat relieved from the perfect quiet, regulated temperature, &c. It being found upon inquiry that the patient had usually taken pale ale in preference to porter, from considering it better adapted to his disease, and as he thought he felt more pain in his joints after taking stout, and moreover as the examination of the blood had shown the existence of an abnormal quantity of uric acid, I deemed it advisable, in order to arrive at a correct diagnosis, to see the influence of diet upon the patient, other circumstances remaining the same. For this purpose, as the appetite had become good, the extra full diet of the hospital was allowed, with the addition of two pints of porter, medicine being at the same time omitted. For the next four days all went on satisfactorily, but on the fifth he complained of severe pain, first in the right and then in the left ankle, which parts were soon swollen and red, and two days afterwards pitted freely on pressure, and gave rise to desquamation of the cuticle; the tongue was furred, pulse above 100, but no marked thirst. The porter and meat were then discontinued, and a draught containing half a drachm of colchicum wine in camphor mixture administered three times a day. Within forty-eight hours, the ankles were greatly relieved, and in a few days quite free from swelling or redness, and altogether in a much healthier state than since the commencement of the attack; the colchicum did not produce either nausea or looseness of the bowels.

"The peculiarity of this case, or what prevented the great toes from becoming affected, it is difficult to determine. May not the acute rheumatism in early life have left a certain amount of alteration in other joints, predisposing them to become subsequently affected by the gouty poison? We find that after accidents, and like causes, weakened parts are more susceptible to its influence.

"No deposits of gouty matter could be discovered, but the first phalangeal joint of the right little finger was flexed and almost anchylosed, whether or not by the deposition of urate of soda in and around the joint it is impossible to say. However, the character of the inflammation, the condition of the blood, the influence of diet, and the striking effect of colchicum upon the disease, can leave no doubt that the case was one of true gout, and there can be no reason why a patient who was in early life subject to rheumatic fever, should not acquire in after years the gouty diathesis."

We have said that we differed with Dr. Garrod in his diagnosis of this case, for after a full consideration of the phenomena, as he has described them, we cannot avoid regarding them but as belonging to rheumatism. Conceiving it of great importance that such doubtful cases should be thoroughly understood, and believing that nothing can be lost either to the science or art of medicine by submitting them to the most ample discussion, we are induced to touch upon the foregoing instance with somewhat more minuteness than under other circumstances we should devote to it.

The reasons which seem to have persuaded Dr. Garrod to regard the case quoted as one of gout are the following:—

1st. The presence of a moderate amount of uric acid in the blood.

2d. The character of the inflammation.

3d. The influence of a full diet in developing the disease.

4th. The curative effect of colchicum.

Perhaps we can best show the inconclusiveness of the chief of these supposed evidences by relating the particulars of a case which was recently admitted into the hospital under our charge. The case might perhaps be given more appropriately when we reach the chapter relating specially to the diagnosis between gout and rheumatism, but it is nevertheless so apposite to the points raised by Dr. Garrod in the case he has stated, that it can scarcely be regarded as out of place here.

M. H. entered the hospital February 6th, 1860, with acute inflammation of both knee-joints. The parts were much swollen, red, extremely painful, excessively tender to the touch, and pitted on pressure. Pulse 115 per minute, full but not hard, intermittent, and otherwise irregular. Complains of pain over the region of the heart, and palpitation of this organ. On auscultation a soft bellows murmur was heard synchronously with the systole of the heart. It was also audible over the carotids as high up as their bifurcation. Tongue coated, bowels regular, urine scanty and high-coloured, depositing a copious lateritious sediment on cooling; specific gravity 1029.50.

Patient at the time of his admission was thirty years of age, had been seven and a half years in the army, had served during this period at Fortress Monroe in Virginia, in Florida, Minnesota, and Michigan—passing thus from a climate almost tropical to one in winter of extreme rigor. Never had rheumatism before; never had gout, and so far as he is aware, none of his relatives have ever been affected with either disease. Habits irregular; drinks whiskey occasionally to excess, and generally when he can get it takes one or two drinks a day. Weighs about 140 pounds, and appears to be of good constitution. During the last two years, however, has been sick several times. In 1858, from August 7th to August 10th, and from August 17th to September 1st, was affected with boils. From November 13th to November 18th, was troubled with wandering pains in limbs, classed in the hospital register as chronic rheumatism. In 1859, was sick in hospital from February 25th to March 30th, with scarlatina, and from September 24th to September 30th, was again attacked with boils. Since this last date to the present time he has enjoyed good health.

The treatment in this case was as follows: Warm applications were made to the affected joints, a small blister was applied over the region of the heart, and there was administered to him, three times a day, a draught consisting of vini colchici sem. ℥ss; potassæ acetat. ℥ss; aquæ ℥ij. Liberal potations of infusion of flaxseed were also ordered. The diet consisted of tea and toast, with beef soup for dinner.

On the following day the pain and tenderness about the knee-joints were much relieved. The pain in the chest was also less, but the bellows murmur was still audible; pulse 90, full and soft; urine high-coloured, but much more plentiful than during the previous twenty-four hours. Bowels have been opened twice rather copiously. Continue draught, warm applications to knees, and diet.

About two drachms of serum were collected from the blister on the chest, and being treated in the manner recommended by Dr. Garrod, and submitted to microscopical examination, uric acid was found to be present in more than the normal amount, the thread passing through the liquid being covered with the lozenge-shaped crystals of this substance.

The case continued to progress favourably. On the 9th the bellows murmur was no longer heard. The swelling and pain of the joints had greatly decreased. It was, however, deemed advisable to continue the treatment a day or two longer. On the 11th the colchicum and acetate of potash were discontinued, and the tinct. ferri chloridi substituted. This was continued till the 20th, when the patient was discharged from hospital entirely well.

Now we think no one will be disposed to question the accuracy of the diagnosis made in this case, which was clearly one of acute rheumatism. The whole antecedents of the patient, aside from the phenomena manifested, evidently point that way, and yet we see that the main facts relied on by Dr. Garrod in the case quoted to indicate gout were present in this. The character of the inflammation was similar, there was an abnormal amount of uric acid in the blood, and the disease was cured by the administration of colchicum. The case was not one where the influence of diet could be brought to play so important a part in developing the disease as in Dr. Garrod's case, for we had no doubt as to its true nature from the first. Moreover, we cannot admit that the fact of a subacute inflammation becoming acute five days after the patient is put upon the extra full diet of an hospital, with the addition of two pints of porter daily is any definite indication of such inflammation being of a gouty character. Neither do we perceive that there is any necessary connection between the two circumstances, and to our mind to assume that there is, savors very much of the "*post hoc ergo propter hoc*" fallacy, which unfortunately is so often met with in medical writings.

We see too that the mere fact of uric acid being present in the blood in abnormal amount is not of itself sufficient to enable us to distinguish gout from rheumatism, and though we are ready to admit that such excess is much more frequently met with in the former than the latter disease, we are not prepared to agree with Dr. Garrod, that it is entirely confined to gout. In fact, we are enabled to assert that it is by no means a rare circumstance in undoubted cases of acute rheumatism, to find the uric acid in the blood augmented in quantity above the average normal standard.

Leaving for the present the further consideration of this part of the subject, we come to the third chapter of Dr. Garrod's treatise which relates to chronic gout.

The description given of this form of the disease is exceedingly accurate. Several interesting and instructive cases are given under this head which we regret not being able to quote at length. The nature and composition of the tophaceous deposits which occur about the joints and other parts of the body are next dwelt upon. After pointing out the erroneous character of the opinions held by the older physicians relative to these concretions, Dr. Garrod says :—

"The consistence of these chalk-like deposits varies extremely; sometimes they are quite soft to the touch, at other times almost as hard as chalk itself. In order to demonstrate their true character, we will examine them carefully in both conditions. A little white spot is observed upon the helix of the ears of patients suffering from chronic gout, and if such has been recently formed it gives rise, when punctured with the point of a lancet, to the exit of a semifluid cream-like exudation. This, covered with a film of glass, and placed under the microscope, exhibits the appearance seen in plate 5, fig. 3, and consists of a clear fluid containing a great number of acicular, or needle-like crystals; exceedingly small, and requiring some considerable magnifying power, and good definition to show them properly. With these crystals, a few blood-disks are frequently observed,

arising from the slight injury to the skin; these are shown in plate 6, fig. 5*a*. If a little of the white exudation be heated with a few drops of dilute nitric acid upon a porcelain dish, and when almost dry exposed to the vapour of ammonia, a beautiful purple colour is produced from the formation of murexide, or purpurate of ammonia. If the white matter be dried and incinerated, a little ash is left, alkaline in reaction, and exhibiting all the reactions of soda. Under polarized light, the appearance of the crystals is such as is seen in fig. 7.

"The white matter is soluble to some extent in hot water, and its solution on cooling or evaporation deposits needle-like crystals of urate of soda, usually arranged in balls or tufts (plate 5, fig. 4). If a concretion in a semi-solid condition be examined, the same appearance is exhibited, except that the crystals are more aggregated together in little masses of needles, sometimes difficult to separate from each other; this, however, can be effected by putting a drop of water upon the slide, and then using a little pressure with the thin upper glass. When the concretion is quite solid, by crushing a small particle and treating it as before, with water, a similar appearance is observed. These white deposits are thus shown to consist essentially, and often entirely, of urate of soda; but, when imbedded and hardened in any tissue, animal and earthy matters may become intimately united with them; these can be separated by treating the mass with hot water, which dissolves the urate of soda, but leaves the salts of lime, and animal matters. A small portion of the uric acid is now and then dissolved out, in combination with some potash or lime existing in the tissues, in the form of urates of these bases, but the amount of these salts is generally insignificant."

There can be no doubt as to the fact that these concretions in the main consist of urate of soda. This was first indicated by Tennant, in 1795, and not by Wollaston, in 1797, as Dr. Garrod seems to think. Since their observations, numerous analyses have been made by Foureroy and Vauquelin, Marchand and others, with similar results. Our own experience, which has not been very extensive, has also led to like conclusions. In one case we found the urate of soda to amount to 49.72 per cent., and the urate of lime to 3.25 per cent., the uric acid, therefore, somewhat exceeding a percentage of 39.24. Herapath has found as much as 14.76 per cent. of urate of lime in these concretions, together with 43.97 of urate of soda, and Lehmann found this latter salt to amount to 52.12 per cent.

Along with the urates are found carbonate of ammonia, chloride of sodium, phosphate of lime, carbonate of lime, &c., in small amounts, and animal matter often in large amount. Dr. Garrod states that this latter is only present in limited quantity, but the analysis of Marchand, which he quotes, shows a percentage of 32.53 of this substance, and two analyses of John, to which he does not refer, gave 56.2 and 73.0 per cent. respectively of animal substance.

These concretions are more frequently met with on the ears than on any other part of the body, and on the upper than the lower extremities. So far as their occurrence upon the ears is concerned, but little attention has hitherto been given to the circumstance; but Dr. Garrod very properly directs special notice to it as in some cases a point of very considerable importance in forming a correct diagnosis. In thirty-seven gouty patients whom he examined with reference to the presence or absence of tophaceous deposits, it was ascertained that they were present in seventeen, and absent in thirty. In the seventeen cases where they were present at all, they occurred in seven cases on the ears alone, in nine cases on the ears and about joints, and in only one case were they found in other parts of the body without being detected on the ears. They are generally found about the fold of the helix; vary in number from one to ten, and in size from that of a pin's head, to that of a split pea. They resemble little pearls; possess a gritty

hardness, but are sometimes soft. When punctured, they give exit to a milky fluid, which when examined with the microscope, is seen to consist of innumerable acicular crystals of urate of soda floating in a colourless liquid.

The size and number of the concretions which occur in chronic gout are sometimes very great, and the most deplorable deformities are in consequence produced. Dr. Garrod details several interesting cases in illustration of these points. The cause of their deposition cannot be said to be clearly and thoroughly understood, but it doubtless depends essentially upon a mal-performance of the excretory functions of the skin or kidneys, or both. As a localizing cause, Dr. Garrod refers to injuries, and cites a case in which a large chalky concretion, the only one which could be discovered, appeared on the back of the hand of a gouty patient, and which was attributed by him to a blow which he had received in a scuffle.

The fourth chapter is devoted to the very important subject of the blood in gout, and contains the chief of Dr. Garrod's original contributions to the pathology of the disease. The healthy state of this fluid is first touched upon, and then the alterations induced by the affection or giving rise to it so far as they are known (and it must be confessed that here our knowledge is extremely limited), are next considered. Dr. Garrod proposes two questions as embracing the essential points of the inquiry.

"Do the normal constituents become altered in character? or are the matters naturally excrementitious retained in the fluid, thus influencing its composition?"

The globules are asserted not to be necessarily altered, and though in many chronic and asthenic cases they are notably diminished, this is assumed to be due more to the debility than to any specific effect of the gout. This is a point which it is manifestly difficult to determine with certainty, but so far as our experience goes, the red corpuscles are very perceptibly diminished, and the colourless corpuscles increased in number, not only in the chronic forms of the disease, but also during the paroxysms of acute attacks.

The augmentation in the quantity of fibrin, which is so common a concomitant of acute gout, is ascribed by Dr. Garrod entirely to the attending local inflammation. It is probable he is correct in this supposition, for as he says, and as we are able to confirm, in chronic gout the fibrin remains at very nearly its normal standard. A large number of analyses are necessary, however, before we can arrive at a definite conclusion on this point.

In regard to the serum, Dr. Garrod is of the opinion that in gouty affections the mean specific gravity is lower than in most other diseases; in fact, with the exception of albuminuria and scorbutus, he finds it lower than in all others. However, it frequently happens that in gout, occurring in robust men, the specific gravity is unaltered, and he therefore ascribes its elevation to defective nutrition or kidney disease supervening, in cases where the disease has lasted a long time. In his opinion, therefore, there is no direct connection between this phenomenon and gout. As to the opinion expressed that the albumen of the blood is never increased in quantity in gout, we think there is much to be said on the other side. We regret that Dr. Garrod has not given the detailed results of his observations relative to this point.

"Where, then" (says the author), "shall we discover the morbid changes of this fluid in gout, seeing the normal constituents are not necessarily modified? It is in the augmentation of those principles which exist in health in such minute traces as to be detected with difficulty that the peculiar alteration of the blood in this disease is manifested."

It is difficult to harmonize the two diametrically opposite opinions contained in the above extract. We cannot conceive why the fact of a principle being constantly present in healthy blood in small amount, should make that principle an abnormal constituent. Urate of soda, urea, and some other substances, are just as much normal constituents of the blood as albumen and others, with which we are, perhaps, more familiar.

Dr. Garrod states that he was first led to examine the blood of a gouty patient for uric acid in the summer of 1847. 1,000 grains of the serum were dried in a water bath, reduced to powder, and boiled with rectified spirit. After being thus exhausted, it was treated with boiling distilled water.

"When a few drops of the watery solution were evaporated almost to dryness with nitric acid, and held over the vapour of ammonia, distinct evidence of uric acid was afforded by the production of the beautiful purple tint of murexide or purpurate of ammonia; and when reduced to a thin syrupy consistence, and a few drops of hydrochloric acid added, and set aside, in a few hours crystals of uric acid were deposited with the characteristic forms of that body."

These observations were repeated by Dr. Garrod with uniform results, so that, in a paper communicated to the Medico-Chirurgical Society, and published in its Transactions, he was able to announce that "the blood in gout always contains uric acid in the form of urate of soda, which salt can be obtained from it in a crystalline state." Since that period to the date of publication of the present volume, from the examination of at least an hundred cases, the only alteration he would desire to make in the above opinion would be to append the words "in abnormal quantities."

The means which Dr. Garrod now employs to detect an abnormal amount of uric acid in the blood are such as render the examination an easy one in clinical practice; and though we are not disposed to attach quite so high an importance to this presence as does Dr. Garrod in distinguishing gout from rheumatism, yet, as the subject is otherwise of interest, we quote for the benefit of those of our readers who may not have access to the work before us, the details of the method recommended by the author.

* * * * * * "Take from one to two fluidrachms of the serum of blood, and put it into a flattened dish or capsule; those I prefer are about three inches in diameter, and one-third of an inch in depth, which can be readily procured at any glass house; to this add ordinary strong acetic acid, in the proportion of six minims to each fluidrachm of serum, which usually causes the evolution of a few bubbles of gas. When the fluids are well mixed, introduce a fine thread, consisting of from one to three ultimate fibres, about an inch in length, from a piece of unwashed huckaback or other linen fabric, which should be depressed by means of a small rod, as a probe or point of a pencil. The glass should then be put aside in a moderately warm place, until the serum is quite set and almost dry; the mantel-piece in a room of the ordinary temperature, or a bookcase, answers very well, the time varying from twenty-four to forty-eight hours, depending on the warmth and dryness of the atmosphere.

"Should uric acid be present in the serum in quantity above a certain small amount noticed below, it will crystallize, and during its crystallization will be attracted to the thread, and assume forms not unlike that presented by sugar-candy upon a string, as shown in plate v., fig. 5, *a*, *b*, *c*; when in the dark field under polarized light, it has an appearance represented in the wood-cut, fig. 10. To observe this, the glass containing the dried serum should be placed under a linear magnifying power of about fifty or sixty, procured with an inch object glass and low eye-piece, or a single lens of one-sixth of an inch focus answers perfectly. The uric acid is formed in the form of rhombs, the size of the crystals varying with the rapidity with which the drying of the serum has been effected,

and the quantity of uric acid in the blood. To insure perfect success several precautions are necessary.

"1. The glasses should be broad and flat; watch-glasses of the ordinary kind are not suitable, being too small, allowing the fluid to be frequently spilt, and also too much curved, causing the film of partially dried serum to curl up and split.

"2. The acetic acid should be neither very strong nor weak. The glacial acid often forms a gelatinous compound with the albumen of the serum, producing flakes; and very weak acid adds unnecessarily to the bulk of the fluid. By experience I find the ordinary strong acetic acid (about $\frac{30}{100}$) well suited for the experiment.

"3. The character of the thread and its quality are of some moment. Very smooth substances, as hairs or fine wire, but imperfectly attract the crystals; if the number or length of the fibres be too great, and the amount of uric acid small, the crystals become much scattered, and therefore but few appear in the field of the microscope. The glass should not be disturbed during the drying the serum, or the crystals may become detached from the thread.

"4. Some attention to temperature is necessary; if the serum be evaporated at a high temperature, above 75° Fahrenheit, for example, the drying may take place too rapidly to allow crystallization; the temperature of an ordinary sitting-room answers well for the purpose; it should be protected from dust.

"5. If the serum be allowed to dry too much before the examination takes place, the surface becomes covered with a white efflorescence consisting of feathery phosphates, which may obscure the thread, and which are represented in plate vi., fig. 4, *c*; they can be removed by the addition of a few drops of water before placing the glass under the microscope; sometimes over-drying causes the film to become cracked or fissured throughout, as well as covered with the phosphatic efflorescence.

"6. It is well, when practicable, to put up two or more glasses with the same serum.

"7. The blood should be recently drawn, or at least no change or decomposition should be allowed to take place in it before the experiment is made, for uric acid, when in contact with animal principles, is liable to undergo decomposition, as we shall subsequently have occasion to show."

From a series of experiments Dr. Garrod ascertained:—

"That an amount of uric acid equal to at least the 0.025 grain in the 1,000 grains of serum, in addition to the trace existing in health, is required before the 'thread experiment' gives indication of its presence, and hence the appearance of uric acid on the thread is complete evidence of an abnormal or morbid quantity in the blood."

We have carefully repeated these experiments, and have obtained almost identical results.

Then follows a table exhibiting the history and symptoms of forty-seven cases of gout, in all of which uric acid was detected in the blood in abnormal quantity. Numerous other examinations have been made by the author with like result, and our own experience, though not nearly so extensive as his, entirely supports the doctrine that the blood in gout always contains an excessive amount of uric acid.

Several other interesting points are discussed in this chapter, to which, however, owing to the length to which this review has already extended, we cannot make further reference.

The fifth chapter treats of the urine in gout. The first part is occupied with a description of normal urine, with which we need not detain our readers. One of the chief points to be considered under the head of the urine in gout, and which Dr. Garrod next proceeds to discuss, is whether or not there is an increased elimination of uric acid compounds in the disease. Many have taken the affirmative side of the question, among

whom we may mention the late Dr. Golding Bird; whilst others, including our author, deny that there is any such augmentation.

It is undoubtedly true that there is frequently—in fact we may say generally—a deposit of urates from the urine of gouty patients, but this fact is far from being any proof that these substances are in excess. The admirable researches of Lehmann and Scherer—to which, however, Dr. Garrod does not allude—furnish us with much valuable information on this subject. From these observations it is rendered extremely probable that to an alteration in the coloured extractive matter of the urine—in which the urates are very soluble—is due their precipitation, even in urine in which these principles are present, but in small quantity. Dr. Bence Jones has also shown that a very slight increase in the acidity of the urine will cause the precipitation of uric acid compounds even when they exist in the excretion in quantity far below the average.

From a number of observations Dr. Garrod arrives at the conclusions that in acute gout there is no increase of uric acid in the urine, but on the contrary frequently a diminution; that in chronic gout it is very much diminished, and that in those persons who have suffered from repeated attacks, but whose urine was examined during the intervals of health, there was no increase in any case, and in the majority was far below the normal standard.

The urine in chronic gout is also generally albuminous, and when examined microscopically is frequently found to contain casts of the renal tubes, consisting of disintegrated epithelium, a fact indicative of kidney disease. In the more advanced stages these are replaced by others of a waxy or fibrinous nature, and then we always find serious pathological changes in the structure of the kidneys.

The sixth, seventh, and eighth chapters, which relate to the morbid anatomy and causes of gout, we are reluctantly compelled to pass over. These chapters contain much instructive matter, and are moreover well illustrated with coloured lithographs and wood-cuts of morbid appearances.

The ninth chapter treats of the pathology of gout. As Dr. Garrod remarks, those who have perused the preceding chapters cannot have failed to perceive that a very intimate connection exists between uric acid and the disease in question. He then proceeds to give a sketch of the nature and composition of this acid, with its relations to the healthy organism under varied normal conditions. There are no original observations relative to these points, and with many recent investigations having direct reference to the subjects discussed, Dr. Garrod does not appear to be acquainted.

The views of the ancients and of several modern physicians are given relative to the pathology of gout, and then the author proceeds to state clearly and succinctly his own views. The essential points of these are as follows:—

1st. That uric acid is invariably present in the blood in gout in abnormal quantity.

2d. That in true gouty inflammation urate of soda is always deposited in the inflamed part.

3d. The deposit is crystalline and interstitial.

4th. The deposited urate of soda may be looked upon as the cause, and not the effect of the gouty inflammation.

5th. The inflammation of gout tends to the destruction of the urate of soda in the blood of the part, and consequently of the system generally.

6th. The kidneys are implicated in gout; in the first stages functionally, in the latter stages structurally.

7th. An impure state of the blood, arising principally from the presence of urate of soda, is the probable cause of the disturbances which precede the seizure, and of many other anomalous symptoms to which gouty subjects are liable.

8th. The causes which predispose to gout, independently of those connected with individual peculiarity, are either such as produce an increased formation of uric acid in the system, or which lead to its retention in the blood.

9th. The causes exciting a gouty fit are those which induce a less alkaline condition of the blood, or which greatly augment the formation of uric acid, or such as temporarily check the power of the kidneys for eliminating this principle.

These propositions are then considered at length separately, and much cogent reasoning adduced in their support. We cannot, however, stop to discuss them with the author, though it would be an easy task to refute many of them. The fourth proposition, which is one of the most essential, is by no means established to our satisfaction, and we may say the same of the seventh, eighth, and ninth.

The fact now universally admitted, that uric acid may exist in excess in the blood without being accompanied by gouty inflammation, shows at least that some other condition must be present, if it is not an insuperable objection to Dr. Garrod's views. There are many difficulties connected with the subject which we think the author clearly perceives and which doubtless prevent him insisting very strenuously upon the establishment of his theory.

The tenth chapter is devoted to the general treatment of the disease, and the eleventh chapter mainly to the consideration of the therapeutic action of colchicum.

Dr. Garrod devotes considerable space to this division of his subject. In regard to the action of colchicum, whilst admitting and even contending for its great value in the treatment of gout, he entirely denies that it is beneficial by reason of inducing an increased elimination of uric acid by the kidneys. The experiments which he has adduced in support of his views are certainly not such as we have reason to expect at the present day when every circumstance capable of influencing a result is taken into account by the practical physiologist. Thus, although it is stated that the diet remained the same both before and after the administration of the colchicum, nothing is said in regard to the physical exercise, so important a factor in investigations of this character. Again, it must be recollected that Dr. Garrod's experiments were all performed upon invalids, some of them even suffering from gout at the time. This circumstance should of itself be sufficient to invalidate his conclusion. Then, too, in the third case which he gives, there was an increased elimination of uric acid under the action of the colchicum, to the extent of over one-third, but Dr. Garrod gets over this inconvenience by the assertion that this is not more than frequently occurs in patients under like circumstances (*i. e.* recovery) when no medicine has been taken. This may be correct, but such cases at least show how important it is that the physiologist who desires accuracy in his investigations should perform his experiments upon persons whose health is not undergoing a marked alteration from day to day.

The only solid constituent of the urine, to which Dr. Garrod's experiments relate, is the uric acid, except in the fifth case, when the urea was also

determined. No other solid constituent, organic or inorganic, was taken into account. In the experiment referred to, the average amount of urea excreted in 24 hours before the administration of the colchicum was 223.6 grains, during the administration 244 grains, and after 236.4 grains, and yet with apparently considerable self-complacency, he states as the second of his conclusions: "That from the observations above detailed, we cannot assert that colchicum has any influence upon the excretion of urea, or the remaining solid portion of the urine." We are perfectly willing to admit this, for his experiments prove nothing whatever on the subject. It is true that the specific gravity of the urine is given in all the experiments, but we can hardly suppose that Dr. Garrod would be willing to form an opinion as to the relative amount of each individual constituent present in a specimen of urine from the mere determination of the specific gravity.

Now we do not wish to be understood as contending that colchicum does increase the amount of uric acid eliminated by the kidneys. Dr. Garrod's view may be correct, but we do not think he has proved it. We do say, however—and we say it as the result of numerous experiments, some of which have been already published, but of which Dr. Garrod does not seem to be aware—that colchicum when given to healthy men or animals, does increase the total amount of solid matter, organic and inorganic (especially the former) excreted by the kidneys; and we believe that it is curative mainly by this power of removing from the blood some principle or principles, which when retained in sufficient quantity produces gout or rheumatism, according to various predisposing causes. Our experiments may be fallacious, but until the fallacy is shown we must be excused for preferring to abide by them.

We should be glad to enter more fully into this portion of the subject, but the fact that our remarks upon Dr. Garrod's book have already extended far beyond the limits we had originally contemplated, must be our excuse for deferring what further we have to say to some other time.

In the twelfth chapter the treatment of chronic gout is considered. The phosphate of ammonia first recommended to the profession by Dr. Thomas Buckler, of Baltimore (see No. of this Journal for Jan. 1846), is extolled as a valuable agent, as are also the salts of lithia, especially the carbonate. All these substances possess considerable solvent power for urate of soda.

The thirteenth chapter relates to the treatment of chronic gout by the various mineral waters of the continent of Europe, and of England. Dr. Garrod does not, upon the whole, appear to think very highly of their influence.

The fourteenth chapter refers to the various forms of irregular gout. We find, however, no mention made of the gouty testicle of which we have seen two cases, and which we believe is also referred to by Wendt.

In the fifteenth chapter rheumatic gout and the means of diagnosing gout from rheumatism are considered. Dr. Garrod admits that the separation of the two diseases is frequently a difficult task, but entirely denies that they are ever blended. He lays considerable stress upon experiments by which he satisfied himself that uric acid is never in excess in the blood of patients affected with rheumatism. We have seen that it always is in gout. Dr. Garrod cites thirty-five cases of rheumatism, in none of which did the condition exist. This is very strong evidence, but as we have found it present in similar cases by Dr. Garrod's own method of determination, we may be pardoned for considering our evidence still more weighty.

We must now conclude our remarks on the book before us. There are

still several interesting and important points which we should like to discuss, but we must defer them to some other time, when we hope to present our views of both gout and rheumatism more fully and prominently before the profession. In conclusion, we would say, that whilst there are many opinions expressed in Dr. Garrod's treatise to which we cannot give our sanction, it is nevertheless, upon the whole, in our estimation, as we have already said, the most complete work which has yet appeared on the subject.

W. A. H.

ART. XIV.—*On Obscure Diseases of the Brain and Disorders of the Mind; their Incipient Symptoms, Pathology, Diagnosis, Treatment, and Prophylaxis.* By FORBES WINSLOW, M. D., D. C. L., Oxon. Philadelphia: Blanchard & Lea, 1860. 8vo. pp. 576.

IN our review of Bucknill & Tuke (in the October number of this Journal for 1858), we descanted on the importance of a knowledge of what may be termed the psychological part of medicine. We know of no book which more impressively enforces the views which we then presented than the one before us. It does so more than the work of Bucknill & Tuke, because it treats not only of insanity, but more or less of all the diseases to which the brain is liable. As the brain is the organ of the mind, not merely the medium of its communication with external things, but an organ upon which it is dependent even in its internal working, that of thought and emotion, during its present state of connection with the body, the diseases of this organ, of whatever nature they may be, present in their symptoms mental and bodily manifestations variously mingled together. In this they differ from the diseases of any other organ in the body, for though in the latter there may be mental symptoms, they are incidental, and to some extent remote, being the result of the sympathy of the brain with other organs.

The mingled mental and physical symptoms produced by diseases of the brain, sometimes strangely deficient, and often exceedingly complicated, require great watchfulness and study on the part of the physician. They are, for obvious reasons which we need not stop to state, involved in much more obscurity than other diseases, especially in their beginning. It is to throw light on this obscurity that the book before us was written, and well has our author performed his duty. He has not merely given us the conclusions to which he has come, and the reasonings which have led him to them; but he has accumulated in this volume a wonderful mass of facts from his own experience and that of others, and almost every point is abundantly illustrated by facts. The whole together makes one of the most interesting as well as valuable books that we have seen for a long time. Its sprightliness, its happy arrangement of topics, its abundance of facts, and its free and for the most part just comments on them, make the book truly fascinating. Its value as a record of experience is much enhanced by the full table of contents, and the copious index. The practitioner who wishes to consult it in reference to any cases that he may have on hand, will find these to be great conveniences.

We do not mean to say that the book is a perfect one. The style is often too diffuse, and there are repetitions which care and precision might

have avoided, to say nothing of some inaccuracies here and there. There is sometimes a lack of accurate discrimination, and occasionally topics and cases are introduced in the wrong connection, or at least having so slight or remote association with what precedes and follows as to seem inappropriate to the place which they occupy. These faults, however, are so small in comparison with the excellencies of the book, that we do not hesitate to recommend it to the profession as an exceedingly valuable work.

It seems that this book is preliminary to another in which it will be the object of the author "to enter more elaborately into detail, and to point out, as far as practicable, the diagnostic premonitory signs of the various organic affections of the encephalon." We shall hope, therefore, to see more thorough discrimination exercised in that book than we see in this. We shall hope then to have more clearing up of that grand difficulty in the investigation of diseases of the brain which results from the fact, that many of the symptoms, especially at the beginning, are often found to be "common to several lesions of this organ, each presenting an essentially different *aggregate* group of symptoms, as well as distinctive anatomical and pathological phenomena."

It is a prominent design of this work to point out the symptoms, both mental and physical, which mark the beginning of disease of the brain, and which are ordinarily termed premonitory. The author believes such symptoms to exist much oftener than is supposed by the profession generally. On this point he states briefly some cases of various forms of disease in which the attack was hidden and was said to be without any premonitory signs, and then puts in relation to them the following inquiries:—

"Fully recognizing the obscurity in which this subject is involved, I would ask, whether the affections of the brain, in the majority of cases, are not preceded by a well-marked, clearly defined, but often undetected and unobserved precursory stage? Is it possible for a person to be suddenly laid prostrate in the arms of death by an attack of apoplexy, cerebritis, meningitis, paralysis, acute softening, or mania, evidencing, after death, long-existing chronic alterations in the cerebral structure, without having exhibited, for some time previously, faint and transitory they may be, but nevertheless decidedly characteristic symptoms, pointing unmistakably to the *brain* as the *fons et origo mali?*[1]

"Is not the alleged absence of all premonitory symptoms more *apparent* than *real?* Would not the history of the antecedents, the pre-existing pathological state of these cases, if carefully unravelled and cautiously analyzed, afford conclusive, if not demonstrative evidence of a prior state, of undetected and unrecognized brain disorder?"

He then states the matter more circumstantially, thus:—

"A man dies of what is termed a *sudden* attack of cerebral hemorrhage, or

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[1] "I freely realize the fact, that in many cases of sudden death the heart is *primarily*, and the brain *secondarily*, affected. This will account for the absence of all morbid conditions of the brain in many cases of death from what is termed apoplexy, associated with appreciable organic diseases of the heart.

"It is often a difficulty to decide, in cases of sudden death, conjoined with head symptoms, what proportion of the fatal issue is attributable to the heart and what to the brain. If the former organ be examined after death, and the slightest alteration is detected in its structure, the conclusion drawn is, that this is the cause of death, even although the vessels of the brain may be discovered in a condition of great turgescence. Under such circumstances, we have no right to infer, that the brain has had nothing to do with the death, merely because the heart is found either in a partial state of disease, or weak, small, and flabby in its condition. It would be safer, under such circumstances, to conclude that death has been caused by the combined effect of disorder in both organs."

acute softening of the brain. The *post-mortem* examination reveals a state of serious organic change in the structure of the brain, which, from its anatomical character, must have been of long duration, and of slow and progressive growth![1] The bloodvessels in the head are found in a state of fatty degeneration, or the seat of atheromatous deposits. A scirrhous tumour of some magnitude is discovered imbedded in the substance of the cerebral mass, the consequence of an injury inflicted upon the cranium some years previously. An encysted abscess is detected in the head, evidently not of recent origin. There may exist an aneurismal tumour connected with one of the cerebral arteries, a considerable thickening and opacity of the membranes enveloping the encephalon, or dipping down between its *sulci*, or, an extensive pulpy disorganization of the brain, involving a large portion of its hemispheres.

"It is not logical, upon *à priori* reasoning, to conclude, that such a degree of fatal organic lesion, so serious an amount of positive structural disease of the brain, could have been developing itself for *months*, and, in some cases, for *years*, without impairing, deranging, disturbing, or modifying the recognized and admitted psychical, motorial, and sensorial functions, of the cerebro-spinal system. Has the intelligence in such cases been intact, the volition unenfeebled, the emotional powers in a sound state, the brain free from all symptoms of *physical* as well as *psychical* disturbance, the cerebral circulation (as respects the *quantity*, *quality*, and *momentum* of the blood sent to the brain) proceeding in healthy integrity; the sensibility natural, the organs of special sense, viz: *sight*, *smell*, *hearing*, *taste*, and *touch*, in a normal state of activity; the life of relation, as well as the phenomena of nutritive and organic life, free from all signs of morbid derangement?

"It is generally admitted, that no structural changes can originate in the heart, lungs, liver, stomach, uterus, kidneys, or bladder, without presenting, prior to death, obvious symptoms of their existence.

"Tubercular disease of the lungs, hydatids of the liver, cancer of the uterus, calculus of the bladder, fatty degeneration of the kidneys, hypertrophy and valvular disease of the heart, cannot (in the majority of cases) exist without manifestly, and often seriously, disturbing the special functions of these organs. Upon what principle should the brain be an exception to the general pathological and physiological laws, regulating other organic structures?"

The conclusion to which our author comes is thus definitely and strongly stated:—

"The affections of the brain have, I maintain, undoubtedly a premonitory and precursory stage. In the majority of cases, the mischief established within the cranium, disorganizing the delicate tissue of the brain, may, upon careful examination, be detected. There are pathognomonic and diagnostic precursory signs, which serve to guide the inquiring, diligent, observant, and intelligent eye of the practical physician, and enable him, with some degree of certainty, to discover the first scintillations of brain disease, even when the patient and those about him repudiate all idea of cerebral ill-health, and refuse to acknowledge the necessity for medical advice or treatment."

We have made these free extracts because we deem the subject to be one of very great importance. If Dr. Winslow be correct in his conclusion, the profession at large are very much at fault in their investigations of diseases of the brain, and physicians ought to see the coming evil in vastly more cases than they do, and take measures to prevent it. The more obscure are the signs of disorder, the more on the alert should the physician be to detect them. And he should not limit his efforts to those cases which are distinctly placed under his care. From the fact that the beginnings of the maladies of the brain are often, for the most part, concealed from the

[1] "In another work will be detailed several remarkable illustrations of fatal disease of the brain, the origin of which could be traced back for long periods, in one case for *forty* years!"

non-professional observer, and even from the professional observer when he is inattentive, there rests an imperative obligation upon every practitioner, to watch carefully all members of the families in which he attends, who have any liability to disease of this organ. If he recognizes this obligation, and performs his duty, he will have the satisfaction of saving every now and then a life valuable to some family, and perhaps to the whole community, and of preventing some from passing into hopeless insanity or imbecility by arresting the violence which over-effort or worrying care is doing to the delicate tissues of the brain.

Especially is what we have just said applicable to the commencement of insanity. Many of its forms are not recognized by the non-professional observer, until the malady has been so long continued, and has acquired so much strength, that it is almost, if not quite, incurable. Cases illustrating this have occurred in the experience of every practitioner. And yet there is no disease in which early treatment is more important. While it is estimated, as stated by our author, that seventy, if not eighty, per cent. of the cases of insanity, admit of an easy and speedy cure if treated early, provided there be no strong constitutional tendency to the disease, or malformation of the head; yet from the neglect of early treatment, consequent upon the failure to recognize the existence of the malady, a very large proportion of the cases under actual treatment prove to be incurable. On this point, for example, Sir William Ellis, superintendent of the Hanwell County Lunatic Asylum for 1833, states that, "on a most careful personal examination of each of the 558 cases now in the house, there do not appear more than 50 who, under the most favorable point of view, can be considered curable." Other statements might be cited of a similar character. The result, be it remembered, is not to be attributed alone to the blindness of the community in regard to insanity. Our profession itself has been more or less blind on the subject. Most medical men have paid too exclusive an attention to the physical part of medicine, to the neglect of the psychological, as we pointed out in our review of the work of Bushnill and Tuke. Though there is an improvement in this respect since such statements as that of Sir William Ellis were made (nearly thirty years ago), the profession have by no means yet fully come up to their duty. Many a patient is shut up with incurable insanity in some asylum, who might have been restored to sanity, and usefulness, and happiness, if the attending physician of the family had performed that duty towards him which the relation that he sustained to him imperatively demanded. We speak strongly on this point, for we have fresh in our recollection many cases in which the practitioner's neglect of his plain duty, from ignorance or indifference, or both, consigned patients to incurable insanity, and in some cases to years of untold mental suffering.

The author, in conformity with the three great functions of the cerebro-spinal system, thought, motion, and sensation, considers his subject under three heads: 1. Morbid phenomena of intelligence; 2. Morbid states of motion; 3. Morbid conditions of sensation. By far the largest part of the book is occupied with the discussion of the first topic, under various heads of a subordinate character. Before entering on the discussion, he notices cursorily various interesting points, raising many questions as to the nature of mind, its connection with the body, the nature of insanity, &c. Most of these cannot be answered, and our author wisely declines to attempt it. If some others had been as wise, we should have been saved a great deal of useless and bewildering speculation, and the profession would undoubtedly

have had at this present time a much clearer idea of what has actually been ascertained in regard to the mysterious connection of the mind and the body. In this chapter the analogy between insanity and dreaming is developed in a very interesting manner, and the dream of Count Lavalette is related, as illustrating the rapidity and automatic character of mental action in dreaming, two points in which, among others, the resemblance is traced.

"'One night,' he says, 'while I was asleep, the clock of the Palais de Justice struck twelve, and awoke me. I heard the gate open to relieve the sentry, but I fell asleep again immediately. In this sleep I dreamed that I was standing in the Rue St. Honoré, at the corner of the Rue de l'Echelle. A melancholy darkness spread around; all was still. Nevertheless, a low and uncertain sound soon arose. All of a sudden I perceived, at the bottom of the street, and advancing towards me, a troop of cavalry; the men and horses, however, all flayed. The men held torches in their hands, the flames of which illuminated faces without skin, and with bloody muscles. Their hollow eyes rolled in their large sockets, their mouths opened from ear to ear, and helmets of hanging flesh covered their hideous heads. The horses dragged along their own skins in the kennels, which overflowed with blood on both sides. Pale and dishevelled women appeared and disappeared alternately at the windows in dismal silence; low, inarticulate groans filled the air, and I remained in the street alone, petrified with horror, and deprived of strength sufficient to seek my safety in flight. This horrible troop continued passing in full gallop, and casting frightful looks on me. Their march, I thought, continued for five hours, and they were followed by an immense number of artillery wagons, full of bleeding corpses, whose limbs still quivered. A disgusting smell of blood and bitumen almost choked me. At length the iron gate of the prison, shutting with great force, awoke me again. I made my repeater strike; it was little more than midnight, so that the horrible phantasmagoria had lasted no longer than *ten minutes;* that is to say, the time necessary for relieving the sentry and shutting the gate. The cold was severe, and the watchword short. The next day the turnkey confirmed my calculations. I, nevertheless, do not remember one single event in my life the duration of which I have been able more exactly to calculate.'"

A chapter on the statements made by patients in regard to themselves, after recovery from insanity, is both interesting and instructive on the whole, although we think it would have been well to have excluded the very long account of one patient, covering over forty pages. A very strange account it is, but there is little of practical value to be learned from it.

One of the best chapters in the book is that on anomalous and masked affections of the mind. Not only is insanity masked in a large proportion of cases in the beginning, but in some cases it is very difficult to detect it when it has been going on for some length of time. In some cases concealment of the insanity is practised by the patient when investigation is set up, thereby adding often materially to the difficulty of proof. In illustration of this, Dr. Winslow gives the following case:—

"A few years back I received a summons from a London police magistrate, to examine a case of alleged insanity. It appeared that a labouring man had committed several serious assaults, and was consequently arrested by the police. This man was examined by a medical gentleman, who said he had no doubt as to his insanity, without, however, being able to assign sufficient reasons for such an opinion. The magistrate had, on more than one occasion, himself investigated the case, and had taken the evidence of the surgeon referred to, but could detect no insanity in the prisoner's appearance or conversation. The medical gentleman asserted it to be his belief that the prisoner was insane, basing his conclusions upon the man's apparently unreasonable conduct, and mad acts of motiveless violence. I examined the prisoner publicly in court, and it was not until after the expiration of nearly three-quarters of an hour, that I obtained a key to the actual state of his mind. I then discovered that he was unequivocally insane.

He was under the delusion that a stranger having evil designs upon his life, was in the habit of placing daily a small pill upon the mantel-piece of his bed-room; that this pill (which he was compelled to swallow) contained an ingredient that greatly excited him, destroying all power of self-control, and leading him to commit the acts of violence of which he stood charged. His insanity then became obvious, and the magistrate signed a warrant for his committal to an asylum. It appeared that this insane man had been severely punished on previous occasions for different acts of unexplained violence, no one suspecting the existence of mental disorder. It was not until I had subjected him to a close and rigid examination for nearly three-quarters of an hour, during which the lunatic showed extraordinary ingenuity in concealing his delusion, and great cleverness in fencing with my questions, that I could establish, with satisfaction to myself, the presence of an insane idea."

In endeavouring to settle the question of insanity in doubtful cases, it will help us much if we bear in mind distinctly that insanity is truly a bodily disease. Let us not be misunderstood. We do not mean that in every case of insanity there is such disease of the organization that it could be made obvious by the dissecting-knife, should death occur. Its trace may perhaps sometimes be so slight or so evanescent that not even the microscope could reveal it. Our idea is that insanity cannot be predicated of spirit alone, unconnected with a material organization, and that it is by virtue of this connection that insanity results. It is on this ground that we make the distinction between insanity and those mental states which result merely from bad habits of mind, either intellectual or moral. There is difficulty, it is true, in carrying out this distinction; and yet it is only on this basis that the question can be settled. In all those cases where it cannot be carried out satisfactorily, we must consent to remain in doubt, and wait for further light. This view of the subject, which we deem to be quite material, is not brought out by our author. Indeed, it is doubtful whether he has distinctly taken this view of it, for although he speaks of "molecular modifications in the delicate vesicular neurine of the brain" as existing in obscure cases of insanity, yet he uses such expressions as "deviations from cerebral or mental disorder," as if the disorder in this disease need not always be cerebral, but may sometimes be simply mental, independent of any affection of the organization.

Valuable as are the facts collected by our author, and the comments which he makes upon them, we think his views are sometimes rather loose. Take, for example, the following passage:—

"I presume it to be a generally admitted axiom that the mind may be *disordered* without being *insane*, using this phrase in its strictly legal acceptation. These conditions of morbid intellect may be considered by some as only degrees of *insanity;* but I would suggest that this term be restricted to those mental disorders, accompanied with positive loss of control, clearly justifying the exercise of moral restraint, and to those morbid conditions of the intellect which sanction an appeal to the protective influence of the law. In other words, I would confine my remarks to those cases in which the mind may be said to be *pathologically* disordered, but not invariably *legally* insane."

This is as if there were a sort of middle ground between sanity and full insanity. We do not admit this at all. There are varieties and degrees of insanity, and the milder forms and the lesser degrees fill up really this supposed middle ground, as is hinted by Dr. Winslow to be the belief of some. Real "pathological" disorder of mind is insanity, and nothing else, and so it should be called both in law and in medicine. And no matter what is the degree or the form of insanity, the patient should be put under either moral or legal restraint, or both, just so far as his good and the good

of others require it. The question is not what is the degree of insanity, but whether its character is such that it requires the kind of restraint that is contemplated. Restraint against the commission of violence is not required where there is no danger of its commission. So, too, restraint from the management of property is not called for when the insanity is such as not to prevent the patient from managing it aright. These are illustrations of a simple principle which is very often disregarded.

This same principle should be kept in view, in deciding upon the moral character of the acts of the insane. The bare fact that a man is insane, does not, as a matter of course, absolve him from all moral responsibility. The question in regard to any act committed by him is, how far was it produced by his cerebral disorder. Perhaps it was wholly—then he is guiltless. Perhaps in part—in that case the guilt is lessened just in proportion to the amount of agency of the insanity in the production of the act. Perhaps not at all—here the guilt is as great as it would be if he were perfectly sane. To make this last point clear, we will suppose a case. Here is one of those strange but well-vouched cases of insanity, in which there is only a morbid propensity to steal. Such a person may commit homicide from revenge and anger, just as a sane person may do, without any influence from his insanity, and therefore should be treated as guilty to the full of the crime. As to the second point, the mixed sane and insane character of many acts opens a subject which calls for a wide and thorough investigation on the part of the experts who are in the habit of testifying in our courts, in regard to acts committed by persons supposed to be insane. And if our views be correct, there is need of some new laws to reach the necessities of the mixed cases referred to. We would like to dwell upon this subject, but it would make this article too long; and we shall accomplish our object, if the investigation which we suggest be prosecuted by those to whom it properly belongs.

The distinction at which Dr. Winslow aims in the passage last quoted, is shown to be not only impracticable, but wrong by some of the very cases of latent insanity, as he terms it, which he cites in illustration of his point. For example, take the following:—

"The party may be an unrecognized monomaniac, and, acting under the despotic influence of one predominant morbid idea, be bringing destruction upon his home and family. His feelings may be perverted, and affections alienated, thus engendering much concealed misery within the sacred circle of domestic life. His conduct may be brutal to those who have the strongest claims upon his love, kindness, and forbearance, and yet his mental malady be undetected. He may recklessly, and in opposition to the best counsels and most pathetic appeals, squander a fortune, which has been accumulated after many years of active industry and anxious toil. He may become vicious and brutal, a tyrant, a criminal, a drunkard, a spendthrift, and a suicide, as the result of an undoubtedly morbid state of the brain and mind, and yet pass unobserved through life as a sane, rational, and healthy man."

Now here is a case in which it is the plain duty of the physician of the family interested, to point out the exact character of the case to the friends of the patient, and show them just what moral and legal restraints are called for, both for their good and for his. He is not to wait for such proofs as shall be patent to a superficial, non-professional observation, before he shall act. To do this, would be to neglect not only the means of relieving from pecuniary loss and domestic distress, but, what is of more immediate interest to him as a physician, the means of restoring the patient to society.

For want of decided action just here, many a patient passes at length into an incurable state of insanity, or even into drivelling imbecility.

It often requires both broad and rigorous investigation to decide the question whether a person is insane. Dr. Winslow has furnished much material for such investigation in his facts and his comments on them; but he has not laboured as fully and as definitely as we could wish at the points of discrimination, which it is necessary to look at when the case is an obscure and difficult one. We will notice briefly some of these points.

If the question be in relation to some act, we are to inquire as to the manifestations of feeling which preceded, accompanied, and followed it. If it was perpetrated without any adequate motive, the presumption is in favour of the existence of insanity. None, for example, but an insane man would murder a boy, because he accidentally trod on his toe, and then say of the act, in the coolest manner, "It is good enough for him—I'll teach people not to trouble me in that way." Acts of theft, done without any advantage to the one that commits them, are indicative of an insane propensity. If an act be based on premises which are outrageously inconsistent with rational views of things, it is evidence tending to prove insanity, although it is to be remembered that sin is always more or less irrational, because in the commission of it passion overpowers or perverts the reason.

There is generally a considerable change of habits of thought and action in the insane; this, then, is a point for investigation in any doubtful case. The change is gradual or sudden according to the rate of rapidity in the onset of the disease. We will state a case which occurred under our own observation: A man of strong passions but rather weak intellect became a decidedly religious man; the change was a very marked one, and he went on for some time in a perfectly consistent course; at length, after some other strange conduct, he committed an act of indecency in public in a neighbouring city, which brought him under the care of the police; on returning home, the affair was noised about and the act was commonly spoken of as a vicious one, showing, according to the opinion of a severely judging world, that his religion was vain. But on investigation it was found that there had been recently a thorough change in all his habits; from being orderly in his accounts, his business, and in all his habits he had become disorderly; from being a strict economist he had become ridiculously extravagant; from being kind in his domestic relations he had become violent and brutal, so that his family were afraid of him, &c. We therefore pronounced him to be insane, though most people laughed at the idea as preposterous. The insanity soon became obvious to every one.

With the change of habits there is oftentimes manifest bodily ailment; when this occurs, of course it makes the case a clearer one than it otherwise would be. So, too, it helps to reveal the nature of the case if we can trace it back by a series of ailments to some injury of the head, even though the ailments have been slight, evanescent and variable.

It is to be borne in mind that the habits of men are sometimes strangely altered where they remain all the while perfectly sane. But when this is the case there are some adequate causes to be seen which have produced the change, and the incidental circumstances of the case are such as to show the mode and the reasons of the change.

It is also to be remembered that sudden developments of character may come from secret causes which have been long operating; but when this is the case, the operation of those causes may be discovered in looking back

upon the course of the individual, though it was not obvious at the time; no suspicion then existing to awaken any scrutiny.

Again, we must not lose sight of the great growth to which wrong and strange habits may reach, and of the accretions of a multiform character which they sometimes gather in their growth. This is the explanation of those monstrous and absurd eccentricities which are sometimes engendered in the course of a long life in persons that are yet truly sane. Eccentricity of character may lead to insanity, but it certainly very often exists without any departure from cerebral health. There are some cases in which the mind is so warped by eccentricity during a long life, that there is at length a strong resemblance to insanity, and the diagnosis becomes exceedingly puzzling. We know some cases in which many of the notions and reasonings and fancies and actions occasioned by mere eccentricity are the same as those which we often witness in the insane; even the belief that voices are heard, and that things are suffered from unseen spirits, and from living persons whom the individual ought to know are not present, although ordinarily quite a positive proof of insanity, we have known sometimes to exist as the product of overgrown eccentricities of character.

There is an exceedingly interesting chapter on the stage of consciousness in insanity. The prominent idea of the chapter may be seen in the following extract:—

"In the incipient stage of insanity, I repeat, the patient is fully sensible of entertaining exaggerated and unnatural impressions; is acutely conscious of the mind dwelling morbidly, and sometimes irresistibly, upon certain trains of absurd, unhealthy, and it may be, alas! very unholy and *impure* thought. He painfully recognizes the fact, that insane conceptions are struggling to master his reason, obtain an ascendency over his judgment, an abnormal influence and control over his passions, and the subjugation of his instincts. In some cases (and this is a distressing and dangerous type of insanity), he is impelled (why and wherefore he knows not) to commit suicide, and even to sacrifice the lives of those related to him by the closest ties of relationship, as well as to give utterance to blasphemous, revolting, and impure expressions! He finds it, occasionally, extremely difficult, and almost impossible, to dismiss from the mind, and keep in subjection, these morbid impulses to acts of homicidal and suicidal violence, or to conquer the insane desire to clothe in grossly obscene language conceptions, from the contemplation of which his delicate and sensitive nature would, when unclouded by disease, have instinctively shrunk with horror, loathing, and disgust."

That there is very commonly this consciousness of insanity in the approach of the disease we have no doubt; it is sometimes dim and sometimes distinct. It exists, too, very often, when the disease has considerably advanced, and can be appealed to with profit in pressing upon the patient the necessity of adopting measures for his relief. The insane can be conversed with in regard to their malady in more cases than is commonly supposed, and the mystery, even trickery, so often practised in the avoidance of any true frankness of intercourse, often aggravates the disease and hinders the cure.

In this chapter Dr. Winslow attempts to account for the fact, that some persons supposed to be of very pure character utter in their insanity the most blasphemous and obscene language. In doing this we think that he has not made the requisite discriminations. He attributes altogether too much agency to the native depravity of the heart. He supposes that this depravity becomes more developed, or makes more free manifestations in the insane condition, because then the will and reason have lost their control over the mind, and it is therefore left to follow out its inclinations.

Although this may be true to some extent in some cases, it is not in all; nay, more, we believe it is not in the great majority of cases. We have known some who, previous to their insanity and after it, have given the most undoubted evidence of their virtue and purity, but who uttered exceedingly obscene language while they were insane. We think that Dr. Winslow himself would shrink back from the conclusion to which his ideas fully carried out would necessarily lead, viz., that the amount of obscene language uttered in insanity indicates the amount of obscenity which was latent in the heart previous to the attack of the malady. Indeed, some of his remarks seem to be inconsistent with the main point which he brings out on this subject.

The truth is, that the operations of the mind, when let loose from the control of the will and reason, are governed by innumerable circumstances both mental and physical, some of which are accidental and variable, and many of them are entirely hidden. Who would think of judging by our dreams of what the mind and heart are inclined to in our waking hours? And yet there is the same freedom from the control of the will and reason in dreaming that there is in insanity. In either case the course which the thoughts take is for the most part unaccountable, and as dreaming is seldom the counterpart of the thoughts of the wakeful state, so are the thoughts of insanity not necessarily the counterpart of the thoughts of the sane condition.

This subject is one of some importance in relation to the feelings of the friends of the insane. The view taken of it by Dr. Winslow, which is also taken by Dr. Bucknill, as may be seen by reference to our review (October, 1858), we think to be incorrect, and calculated to inflict unnecessary pain in some cases. Hear what a parent says, as stated by Dr. Winslow:—

"'I have been most careful in the education of my child,' said a gentleman, in deep distress, to me one day, whilst listening to the incoherent ravings of his poor daughter (scarcely nineteen years of age!) 'She has,' he continued, 'seldom been out of the house, and has only been allowed to associate with our own limited and select circle of friends and relations, all of whom are morally, if not religiously, disposed. I never knew a more pure, delicate, and unsophisticated mind, than she possessed previously to her illness; and now, when deranged, she manifests an accurate acquaintance, not only with the most corrupt ideas, but with the improper *phrases* ordinarily used by the most depraved street-walkers!'"

In such a case essential relief could and should be afforded to such agonizing feelings, in accordance with the views which we have expressed above.

One word as to the sources from which, in the case of the pure-minded, the obscene language is derived. In this world, so abounding in wickedness, more enters the minds of children, as suggested by Dr. Winslow, from unprincipled servants, or from vicious books surreptitiously smuggled in, than parents are aware of. Then add also what is heard by the wayside accidentally, or from companions of impure minds, and what is read in some of the vile advertisements, and the minute records of crime so common in some newspapers, and taking into the account the wild excitement of the mind, and of the natural instincts produced often in insanity, we have an abundance of causes for all that we hear in the most painful cases with which we meet.

There follow now several chapters on what are termed stages of insanity —the stage of exaltation, of mental depression, and of aberration. The

word *stage* is certainly not appropriate. *State* would be better. The conditions described are not stages which succeed each other in the disease, but they appear in the various cases in different degrees of prominence, sometimes separately, and sometimes more or less mingled together.

Nearly two hundred pages are very profitably occupied with the memory as disordered by the various diseases of the brain. In the last chapter of this portion of the book, which is on the psychology and pathology of the memory, our author introduces the following speculations:—

"It is difficult to suggest a physiological or metaphysical hypothesis which satisfactorily explains those remarkable conditions of mental paralysis, singular manifestations and aberrations of memory (to which I have previously referred), as preceding, accompanying, and following acute and chronic affections of the brain, unless we espouse the doctrine of the *indestructibility of ideas*, and subscribe to the notion that no impression made upon the mind is ever destroyed.

"If we accept this as an established philosophical theory, we can easily understand how subtle microscopic changes in the delicate nerve-vesicle (*gray* matter of the brain) may cause great eccentricity and singular irregularity in the exercise of the memory, and occasionally, in certain morbid as well as healthy conditions of cerebral exaltation, awaken into active consciousness ideas imagined either to have no existence, or long since supposed to be buried in oblivion.[1]

"Annihilation exists but in the fancy. It is an illusion of the imagination, a dream of the poet, the wild and frigid fantasy of the sceptic. Nothing obvious to sense admits of destruction. This is a well-established axiom in physics. It is not in the power of man to destroy the slightest particle of matter. What is termed 'destruction,' as applied to material substances, is nothing but a change in their elementary composition, or alteration of their constituent atoms. The good and wise Benefactor, the Beneficent Creator of the universe, has not delegated to poor puny man the power of destroying any portion of the physical universe by which he is surrounded, and which ministers so bountifully and mercifully to his every necessity. He may, by chemical or other scientific processes, alter and rearrange the existing combinations of organic matter, but, when disintegrated by such means, the particles so dissipated and apparently destroyed, enter into new and different forms, and assume other types and organisms, but are, in their *original* nature and elements, never annihilated.

"What is true with regard to *material*, holds good, *à fortiori*, respecting *psychical* phenomena. Hence the tonic, permanent, and indestructible character of the impressions made upon the *cerebrum*, and *received* and *registered* in the *mind* during infancy and childhood, as well as in adult age, as established by their resuscitation in advanced and at other periods of life during certain normal and abnormal conditions of the vesicular brain structure and cerebral circulation."[2]

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[1] "Is the permanent character of the pictures traced upon the memory dependent (as Locke surmises) on the '*temper*' of the brain, as if some impressions were made upon *marble*, others on *freestone*, and some on little better than on *sand*?

"'*Cur seniores amplius mente valeamus, juniores citius discimus?*' asks Aristotle; why is it that in youth we learn more quickly, and wherefore is it, as age advances, the intellect becomes more powerful?"

[2] "I use the phrase '*received*' advisedly, for it must be admitted that there are many impressions which impinge themselves transiently on the mind—ideas that are evanescent in their character, and therefore obtain no settled hold upon the consciousness—which cannot philosophically be deemed as *received* and *registered* in the memorial archives. Such are the fugitive notions which do not become objects of *perception*, that so frequently float upon, and pass like shadows over the surface of the mind, in early as well as in matured life, when the brain is not anatomically and physiologically organized or fitted for the facile perception, reception, and registration of ideas. There can be no doubt that the defective memory which so often accompanies old age, is mainly dependent upon certain (as yet unexplained) modifications in the physical nutrition or chemical constitution of the brain interfering with that *vital*, *organic*, and, I may add, *psychical sensibility*,

We demur to this, as a view altogether too materialistic. At least there is no proof that there is a material trace on the brain for every mental impression, much less that this trace is one that can never be effaced. It is a mere supposition, and one, too, which we deem to be inconsistent with many of the phenomena of the mind. We will take a familiar case. You are endeavouring to recall some name, but in vain. At length in some way, you know not how, it comes to you. Is it to be supposed that some little jostle of the nerve-vesicles turned up this lost impression to the mind? With all the minuteness of structure revealed by the microscope, should we not consider such a supposition as not only gross, but ridiculously so? Take another case. A patient under our care during a severe attack of erysipelas had the idea that he was away in some very desolate and miserable place, and his great, all-absorbing thought was that he must get home. The false impression was so fixed upon his mind that he could not be made to believe himself at home even after he was fairly convalescent. We remember calling his attention to objects about the room, as he sat bolstered up in his bed—objects which had been familiar to him through many long years. To all this he shook his head, and said, "I am not at home." At length, after a refreshing night's sleep, he awoke in the morning and found himself at home, wondering very much how he got there. Was there here a sudden restoration to the mind's view of old impressions stamped, as we may say, on the cerebrum? Is not this a manifest impossibility? We have no doubt that the original difficulty was physical—that is, that the mind acted in this strange way in consequence of the state of the brain. But to say that the state of the brain influenced the impressions which the mind receives, is far from saying that the impressions are made on the brain itself, or that the record of the impressions on the mind is dependent for its permanency upon the traces which are at the same time made on the material organization.

Take another case related by Dr. Winslow :—

"A lady, who died of obscure visceral disease, became delirious three hours before death. She then began to talk, in what appeared to those about her, to

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so essentially necessary for its ready adaptation to mental impressions. It may be that the ideas are in reality received, but that the faculty of *reminiscence* being either originally defective, or enfeebled by age or disease, it ceases to obey the commands of the will. The atrophy, as well as diminution in the depth and complexity of the convoluted surface of the brain, so often witnessed after death, in aged persons, undoubtedly impairs that organic cerebral susceptibility and sensibility so necessary for the rapid and permanent reception of mental impressions.

"I had an opportunity, last year, of observing two remarkable illustrations of this fact. I was present at the *post-mortem* examination of the body of a gentleman who died of visceral disease, at the advanced age of 84. Up to this period he had been remarkable for great vigour of intellect, and for extraordinary elasticity and retentiveness of memory. He appeared to have forgotten no impression that ever had been made upon his mind, in early as well as in advanced life. During the examination of the brain I was remarkably struck with its anatomical appearance. The gray matter was by no means diminished in quantity or consistence. The sulci were well marked, and both as to volume, character, and depth of its convolutions, the brain presented an aspect similar to what a pathologist would expect to detect in a person dying in full intellectual power at the age of 30 or 40. In another case, I examined the brain of a gentleman whose mind had become prematurely enfeebled for six years previously to his death. He died at the early age of 56. The convolutions of the brain had greatly diminished in depth as well as in complexity, and the encephalic mass also presented a general shrunken or atrophied appearance. The brain was unusually pale, and there was also (without softening) a want of coherence in its texture."

be the 'unknown tongue.' No one understood a word she uttered. It was eventually surmised that she was conversing in German, a language she had acquired in early life, but which she had apparently forgotten. A native of that country, who was at the time on a visit at a friend's house, was sent for, and conversed with the patient in German. The relations of the lady assured the medical gentlemen in attendance, who were much struck by the singular phenomenon, that she had not spoken the foreign language since she was *ten* years of age! Five years previously to her fatal illness she accompanied some friends to Frankfort, but whilst there never attempted, although frequently urged, to converse in the language of the country. It was then supposed that all the knowledge she had acquired of German when a child had been effaced from her mind."

Can it be supposed that the learning of the German language in her childhood produced "a molecular change in the physical tissue of the brain," and that the revival of this knowledge in her last hours came from some "specific kind and degree of stimulus, physical, mental, objective or subjective, applied to the special cerebral registering ganglia upon which the mental pictures are supposed to be traced?"

We do not pretend to solve the mysteries of the memory. We only say that the supposition of Dr. Winslow is not only destitute of proof, but has not even an air of probability, scarcely of plausibility. There seems to be in the mind of Dr. W. and others who advocate the same views, an idea that there must be some *material* impression in order to make anything mental, permanent. We do not believe this. What is purely mental may be as permanent as that which is material, at least for aught that we know. The analogies to which our author appeals to sustain his views are certainly very loose ones, and we will not stop to notice them. In discussing this topic, we will remark, that many expressions fall from the author's pen which are so inconsistent with his theory, that we are led every now and then to doubt his full belief of it. This comes of an indefiniteness in thinking, which, with all his acuteness, we must lay to his charge.

The remaining chapters of the book are on the Morbid Phenomena of Motion—of Speech—of Sensation—of the Special Senses—of Sleep and Dreaming—of Organic and Nutritive Life—and the General Principles of Pathology, Diagnosis, Treatment, and Prophylaxis.

We had marked many passages in these chapters for comment, but we will close this article by barely alluding to a few things in the last chapter.

The author does not enter into a full examination of cerebral pathology —this we shall expect in his forthcoming volume. What he does say, however, is very suggestive. He gives brief accounts of cases of various cerebral disorders in which either no traces of disease, or exceedingly slight ones, were found on examination after death. He speaks of the various conditions of the brain found in autopsies in cases of insanity. He says of some in which no lesions are discovered:—

"Such types of insanity must either be connected with subtle changes in the vesicular neurine, of which we at present have no knowledge, and which are not even detectable by means of the microscope, or arise from an altered condition of the blood, nerve force, or chemical constituents of brain matter, of the nature of which we are obliged to confess ourselves profoundly ignorant."

In the remarks on diagnosis there is much that is valuable, and yet there is not as much of searching and accurate discrimination as we could wish. The same can also be said of the author's remarks on treatment. We would say in this connection, that we think that we have a right to expect from those who have charge of insane asylums something more in relation

to the treatment of insanity than we have yet had. The profession ought to be more enlightened than they have yet been in regard to the amount of agency physical medication exerts in the cure, and the circumstances which should govern its application.

We have the same characteristics in this last chapter that appear in the whole work. There is abundance of material and of comment. There are acuteness, great liveliness and beauty of style, often eloquence. But there are carelessness, repetition, often irrelevant matter, and sometimes lack of discrimination. The excellencies of the work by far predominate over its faults, and no physician can go amiss in buying it. We will warrant him against getting asleep over it, even after dinner; and if he wishes to do his whole duty to his patients, he will be glad to find here much light thrown upon a group of diseases which are necessarily involved in great obscurity. W. H.

ART. XV.—*Foundation for a New Theory and Practice of Medicine.* By THOMAS INMAN, M. D., Lond., M. R. C. P., London; Lecturer on the Principles and Practice of Medicine; Physician to the Liverpool Royal Infirmary; Author of "Spinal Irritation Explained, or a Treatise on Myalgia," &c. London: John Churchill, 1860. 8vo. pp. 374.

IF there should be announced, in astronomy, a new theory of the solar system, or, in chemistry, a new doctrine of affinity, it might be expected, in either case, that it would be sustained by the name of a Leverrier or a Faraday; or, that it would so abound in demonstration as to leave little room for doubt, if it were to attract the serious attention of scientific men. In our science, however, and especially in therapeutics, more margin appears to be left for speculation. We have not yet reached the great central fact of pathology, nor a universal rule for the *ars medendi*. It becomes, therefore, a duty, to examine the claims of those who assert their power to contribute essential aid to medical progress, either by destroying ancient errors, or by establishing new truths.

A careful reading of Dr. Inman's book compels, however, the opinion, that it would have been more satisfactory under a different title. The idea which pervades the work may be conveyed to our readers in a few words. The author holds that disease is simply a departure from health and vigour, and recovery simply a restoration to vigour and health; and that the broad principle which must underlie all theory and practice presents itself as a truism thus: To cure disease we must bring the patient to health. The method of doing this is, to sustain or recuperate the vital force. This is contrasted with what is designated as "the viciousness" of the plan taught in ordinary medical treatises, with the exception of that of Dr. Bennett, of Edinburgh—according to which plan disease is dealt with as an entity, which invades the body, and which remedies are to combat and drive out. We have traversed, not without interest, the whole volume, to find, upon the last page, in definite language, a reason and justification given for the bold announcement of the author's title-page. It runs thus (p. 352):—

"Lastly; and it is this conclusion which has induced us to give the title we have done to this essay:—

"That the theory and practice of medicine ought to be based upon alteration in *power* or vital *force*, rather than in change of *structure*."

It is impossible to avoid the impression, that the idea of this passage, which is amplified throughout the whole book, is far from new. Is it not, in fact, essentially Hippocratic? Was it not taught, somewhat in disguise, in the animism of Stahl, the parent of modern expectant practice, and, more discreetly guarded, in the vitalism of Barthez, of Montpellier? Dr. Inman admits that Celsus apprehended the principle of reliance upon nature, and economy of force, upon which he lays so much stress; and he evidently considers that, were Celsus living now, he would be engaged upon the self-same task of reform. It would not be difficult to show that the same principle has been understood and expressed by other eminent writers. in all ages of medicine. It will suffice, for our present purpose, to quote one alone, from among the cotemporaries of Cullen and Pinel. Thomas Withers, M. D.,[1] 1794, writes thus:—

"The *strength* of the system, like the wealth of a nation, should be *preserved* with the *exactest caution*, that it may be found vigorous in health, and able, when under disease, to *support* and *overcome* the dangers with which it is threatened."

Brunonism does not differ, practically, from the vitalism of the work under review, except in that Brown, urged by the Hallerian doctrine of irritability, substituted "excitement" for vitality or vital force, and admitted the existence of a few disorders of a really hypersthenic character. When Dr. Brown invited his students to dinner to show them how drinking could cure him of the gout, he might certainly claim to have established a paradox in practice, and to have refuted some prevalent ideas concerning the arthritic diathesis. If this was a narrow foundation for a "new theory and practice of medicine," we are able to find still less available material for the same purpose in the volume before us, with much less of novelty in the superstructure.

In physiology, the radical idea of vital dynamics, of the peculiarity and supremacy of vital force in the living organism, has been developing, at least, since Bichat. It has grown familiar, in the writings of Valentin, Liebig, Carpenter, and others. The correlations of life-force with the inorganic physical forces are now more and more urged; even Owen[2] admitting a doubt in regard to the spontaneous evolution of protozoa by a certain "collocation of particles," and Pouchet[3] asserting new experimental evidence of the actual occurrence of such phenomena. It is true, that all physicians, and even all medical writers, have not based their systems of practice upon physiology. A more patient and thoughtful attention to vital dynamics might be of advantage to the culture of many practitioners; and it is herein, chiefly, that, setting aside the question of novelty, we find the principal value of a publication like that of Dr. Inman. It is believed, by the latter, that many physicians, towards the end of a long experience, act upon his principle, although none of them have, as yet, been bold enough to publish it. Yet, the "Young Physic" of Sir J. Forbes, and the "Nature in Disease" of Dr. Bigelow, not to mention some later and more rhetorical

[1] The same writer deplores "the abuse from excess of bleeding," which he declares to be the more dangerous "on account of the acknowledged degeneracy of the human species." *On the Use and Abuse of Medicine.* London, 1794.

[2] Address before the British Association at Leeds, p. 28.

[3] Hétérogenie, &c., 1859.

contributions to medical literature upon the same topics, are very much to the same effect. The work of Dr. Inman would not, in fact, have attracted the moiety of the attention it receives, but for the previous existence of a certain ebullition, which might almost justify our calling the present period an age of medical scepticism.

It is singular that our author should, indeed, have supposed himself to be almost alone in medical reform, while he refers, repeatedly, to the great improvements in therapeutics *already accomplished*. Thus, on p. 238, he contrasts the present prognosis in pneumonia and pleurisy with the results of the same diseases thirty-five years ago; on p. 338, a similar comparison is made in regard to fevers and erysipelas; and on p. 341, the success of "the present plan of treatment" is noted as especially remarkable in convulsive affections. It will be hardly out of place to recall the fact, that the *tonic* treatment referred to was appreciated fully in *hysteria*, as long ago as the time of Sydenham.[1]

Nor does it seem otherwise than inconsistent for our author, along with these admissions of accomplished progress, to insist or imply, as he does repeatedly, that what is *now* orthodox practice will in "a time that is coming, the sooner the better" (p. 156, note), be consigned to such obloquy or oblivion as now belongs to the weapon-salve and kindred absurdities of former times. It is asserted positively in the preface (p. xi.) that Hahnemann and his followers demonstrated their advantage over the older school of medicine "both in reduced mortality and duration of illness."

It is impossible to admit that this is the judgment of the profession, when guided by the utmost impartiality. It is difficult to see how any one, examining the report of Dr. Routh based upon personal inspection, or the analyses of Drs. Gairdner and Simpson[2] of the published statistics, can fail to see the error of such an assertion. Upon this question, however, we have no occasion to dwell.

It will be desirable to give some account of the contents of Dr. Inman's chapters; in which, as we have already said, will be found, here and there, matter of considerable theoretical and practical interest.

The first fourteen chapters, comprising nearly two-thirds of the book, might have been entitled "Studies of the vital force." The propositions which the author endeavours in them to establish are recapitulated at the close of the volume (p. 349). They are as follows:—

"1. That the phenomena of life are due to a definite *force*. 2. That the vital force is not identical or co-relative with any other known force. 3. That it is a force acting in a definite direction, which direction differs in genera, species, and individuals. 4. That the vital force manifests itself in two forms—conservative, *i. e.*, resisting injuries; reparative, *i. e.*, repairing damages. 5. That in healthy human beings, under favourable circumstances, the amount of vital force in each is equal. 6. That vital force cannot be increased beyond the natural standard. 7. That it may be deteriorated, reduced, or depressed. 8. That when it is so depressed there is alteration of structure or function in one or more parts of the body. 9. That the presence of disease implies impairment of vital force. 10. That vital force may be regained, or restored to its healthy standard. 11. That repair of injuries and recovery from disease can only take place through the instrumentality of the vital power. 12. That the reparation will be fast or slow, according to the amount of vital force in the system, or in a part."

The practical conclusions deduced from these premises will occupy our

[1] On Acute and Chronic Diseases; edited by Dr. B. Rush, Philad. 1815, p. 393.
[2] Tenets and Tendencies of Homœopathy, 3d ed. p. 105.

attention presently. There is, in the examination and discussion of the topics above enumerated by Dr. Inman, proof of a great deal of intelligence and careful observation; and much valuable information is conveyed, a portion of which is to a certain extent new.

In Chapter VI. the subject of "deficiency of vital force" is taken up. "Incipient death" is considered at length, and the view is advocated that many of the symptoms and signs of local as well as general disease are in fact signs of the body or its parts being in a slowly or rapidly *dying state*. By this state the author means to indicate "the intermediate condition between the period when a part is living and in health, and when it is dead and a foreign body." Pain is mentioned as one of the most frequent attendants of this condition of incipient death; and an effort is made, it appears to us in too sweeping a manner, to establish a diagnostic connection between pain and degenerative disease.

Chapter VII. is occupied with the functional and structural results of deficiency of vital power in the *nervous system*. The most important phenomena described are those of mental derangement, insomnia, defective or perverted sensation, spasmodic affections, and paralysis, when the cerebro-spinal axis is especially the seat of exhaustion; and feeble respiration, palpitation, vitiated secretion, and a tendency to sloughing, if the organic nervous system be more particularly involved. In the brain, spinal marrow, and other nerve-centres, *softening* is indicated as the most usual and direct organic result of depression or exhaustion of the vital force. Degeneration of the cerebral vessels is treated of in Chapter VIII., with the introduction of the history of twenty-two cases, intended to show the disadvantage of "depressing treatment" in apoplectiform affections, and the corresponding preventive and curative power of tonics and a supporting regimen. In analyzing these cases with some care, we find mention made, in nearly all, of symptoms or circumstances which would have suggested to *most* practitioners the inappropriateness of large depletion. Vertigo, headache, occasional mental confusion, &c., are universally known to be very often dependent upon an enfeebled condition of the system, requiring tonics, stomachics, &c. At the same time, it is very probable that harm has been done, in former times, by considering too little, when apoplectic symptoms were apprehended, the general force of the economy, especially in advanced life. As seconding the important teachings of Dr. Todd upon this point, the narrative of such cases has its value.

Similar observations are extended by Dr. Inman to the history and management of *hydrocephalus*. Having been led by analogy and experience to treat this affection upon an invigorating plan, he remarks that—

"The result has been well marked; instead of finding hydrocephalus now to be a fearfully formidable disease, I find it quite as tractable as any other strumous affection, and the mortality to be not more than about ten per cent.

"This has been brought about, first, by recognizing threatenings of brain disease at an earlier stage of the complaint than was formerly considered possible; secondly, by paying strict attention to the smallest departure from health; thirdly, by avoidance of all depressing remedies, especially purgatives; and, fourthly, by using steel, change of air, and other tonics."

In Chapter IX. deficiency of vital power in the *lungs* and *respiratory apparatus* is discussed. Its familiar signs are, feeble, irregular, or sighing respiration, singultus, &c. Inferior capacity of performance with the spirometer is, very reasonably, ascribed rather to a defect of *muscular inflating power* than to physical peculiarity or change in the lungs themselves. This

is especially shown by the variations which occur, in this respect, with the same individual at different times, even during the same day.

Deficiency of vital power in the *heart* and *bloodvessels* engages the attention of the author in Chapters X. and XI. Degenerative affections of the vessels appear to have been special subjects of study with him; a "history of atheroma in arteries" being connected with his name on the title page of this work. We find, accordingly, in Chapter XI., an interesting and succinct account of the changes, chiefly fatty and "brittle" degenerations, to which arteries, capillaries and veins are liable under old age or disease.

In Chapter XII. the *stomach* is shown to make manifest the lowering of its vitality by indigestion, and especially by *anorexia* and *flatulence*. This last symptom is deemed by Dr. Inman to be of sufficient consequence to form the subject of a separate essay, which is placed in an appendix. He believes flatulence to be, when at all persistent, an evidence of systemic as well as gastric debility, for which the essential remedies are those general measures which are calculated to improve the general health.

Debility and defective vitality of the *muscles* has been a favourite topic with our author; under the name of *myalgia* he has made it the subject of a volume previously published. The prominent results of "incipient death" in the muscles are described (Chapter XIII.) as being loss of power, softness of texture, irregular and spasmodic contractions, pain and soreness. These symptoms are recognizable not only in the voluntary muscles, but also in those of organic life; as the alimentary canal, the bladder, uterus, &c.

Lastly, in Chapter XIV. we find a long exposition of the influence of deficiency of vital power upon the *blood*, and upon the secretions and excretions. The statement upon which Dr. Inman dwells with the greatest emphasis is, that "the quantity of fibrin in the blood is evidence of poverty rather than richness." This is supported (Appendix, No. II.) by a table compiled from the reported analyses of Simon, Andral and Gavarret, Becquerel, Rodier, and Beclard; affording to the author the deductions, that there is a larger proportion of fibrin in venous than in arterial blood, and that the amount of it, increased to 90 per cent. or more by fasting; and, in old age or great weakness, 200 per cent. Dr. Bennett is reported as having found it to be 1100 per cent. in excess in a case of leucocythæmia, and 700 per cent. in one of cancer. In Dr. Inman's table, acute rheumatism stands at the head of the list, as exhibiting an excess of fibrin ranging from 190 to 550 per cent.; pneumonia follows at a short interval; then come Bright's disease, cholera, glanders, bronchitis, &c.; chlorosis and disease of the spinal cord terminating the series, with an excess of 75 per cent.

These results are interesting, and no doubt reliable, as far as they go; but the subject is too complex to allow of hasty or dogmatic decisions and inferences. To the question of our author, "are we not justified in drawing the conclusion, that whenever there is excess of fibrin in the blood, a considerable amount of debility is present?" we would answer that, in the practical sense in which he interprets it, of *comparative* debility, indicating roborant treatment alone, such a conclusion is obviously premature. While we are unable positively to determine whether fibrin is an excrementitious or a purely plastic substance, it is certainly necessary that farther investigation should be applied to its variations, and to all others affecting the blood in disease, before we can draw any precepts in therapeutics from such data.

While upon this subject it is necessary to allude to the citation (p. 194)

by Dr. Inman, of the experiments of Mr. Paget;[1] in which, apparently from an anxiety to obtain their support for his own theory, the former writer has not been sufficiently accurate. From the examination of lymph obtained by vesication from thirty patients in St. Bartholomew's Hospital, Paget drew the positive inference that "the highest health is marked by an exudation containing the most *perfect and unmixed fibrin*." This cannot, surely, be tortured in any way so as to sustain the view just alluded to, as advocated by Dr. Inman.

Among the most interesting portions of the book under consideration, are the pages devoted to the subject of the influence of depressed vitality upon the *secretions* and *excretions*. Combating the notion that secretion is essentially an active process, and denying, in somewhat too summary a manner, the practical value of the distinction between active and passive secretory transudation, a number of facts are brought forward to show the association of increased perspiration, bronchial secretion, gastrorrhœa, &c., with decaying vigour, or at least temporary debility. Similar reasoning is extended by analogy to the subject of the treatment of *dropsy;* affording the writer ground for the opinion that the plan of treating dropsical effusions by diuretics and frequent purgation, without strengthening remedies, is "radically bad."

The effect of depreciated vital energy upon the *excretions* is fully considered. Excreta do not decompose while within the cavities of the body so rapidly as after they have left it. It is, then, a question, as "vital power" does not appear to leave an amputated limb immediately upon its separation from the body, whether vitality does not retain some influence even over the excreta for a time after their expulsion. Dr. Inman's attention was first called to this subject by M. Ledoyen, who, in illustrating the effects of his disinfecting liquid in the pauper hospital at Liverpool, remarked upon the diagnostic and prognostic significance of the degree of chemical change which had occurred in the alvine dejections of a number of patients. Other facts subsequently confirmed the same view.

"If any one will diligently consult the napkins used by infants, he will find that, during the time the motions are of a good healthy yellow colour, they have a peculiar odour, which they retain for twelve hours at least; but if, from any cause—*e. g.*, debility in the nurse, or inappropriateness of the food—the child loses its healthy condition, the motions not only change in colour and consistence, but in smell, and decompose in a very short time after being passed. Where there is diarrhœa and excessive depression of the vital powers, the motions are often found to be decomposed in a few minutes. We may notice, too, that a similar result is met with at the same time in the other secretions of the child; and that the urine decomposes quickly, and the breath is foul or sickly. But it is not in children alone that these changes may be detected; they are equally evident in adults."

It is laid down by our author as a rule, that if, on a cool day and in a cool room, the urine of a patient shows evidence of decomposition in twelve hours, it is proof of a debilitated condition of the bladder, the kidney, or the system generally. The only objection to the large use of this method of diagnosis is the insalubrity of a collection of discharges preserved for twelve hours or more for examination. But the facts are well worthy of attention. We have observed, in going the rounds of a hospital, that flies collect more numerously about the bed of a patient who is very ill and feeble than about those who are in a more healthy state; probably from the same cause

[1] Surgical Pathology, Phila. ed., p. 220.

as that of the occurrences alluded to above, viz., the more rapid decomposition going on in the perspiration, breath, &c., of the debilitated body.

The practical conclusions of Dr. Inman, from the facts and ratiocinations elaborated in the first part of his work, occupy the remaining chapters; with some illustration of their bearing by cases, and frequent criticism of other views. These conclusions may be best stated in the author's own words, by continuing a quotation commenced upon a previous page.

"13. That any plan of medication which produces a steady diminution of vital power must necessarily be bad.

"14. That all treatment must have for its end and aim the restoration of the patient to the standard of health.

"15. That these principles ought to underlie all medical theory and practice.

"16. That in following up these principles, the physician must closely ascertain what are depressing agents, and those which have an opposite tendency, generally and locally.

"17. That vital force cannot be directly increased or augmented.

"18. That food and physic are only 'means to an end.'

"19. That it is unphilosophical to employ means to restore the vital force in a part, if we are doing anything to depress it as a whole, and *vice versâ*.

"20. That there cannot be deficiency of vital force in one organ without a corresponding deficiency in other parts, except from some purely local and temporary cause.

"21. That where there is evidence of deficient vital power in the nervous system, and in the heart, lungs, stomach, liver, &c., it is unphilosophical to assume that one organ is diseased because the other is; inasmuch as all of them are affected from one general cause, *i. e.* deficient vital power." (p. 350.)

It is unnecessary to occupy more space with this recapitulation, as the substance of Dr. Inman's remaining propositions has already been fully conveyed.

There is certainly an attractive *simplification* of practice involved in this view of disease and its treatment. But Dr. Inman himself sees in it sufficient complication; as, "although it may seem a very simple thing to endeavour solely to bring back the vital powers of a patient to the standard of health, yet in reality nothing is more difficult to effect." And, looking back to that portion of the volume which is the most closely reasoned, we find an admission that the problem of therapeutics may even include other elements and formulæ. It is there said (p. 79) that the physician in certain cases "takes blood, gives calomel, antimony, and the like, all of which have a direct tendency to diminish the vital force; but he uses them for a short time only, and if by the use of them he is enabled to restore the normal condition of any organ, the disease of which threatened to cut short life, they become converted into direct conservators."

This is very sound therapeutics; but it has been forgotten in the enunciation of the scheme of doctrine afterwards given out for the purpose of replacing the "old and faulty plan of medication." The use, however, by our author, of the expressions quoted in the above passage, shows that no strict analysis or logical synthesis of the relations of disease to treatment can result in the determination of a *unity* of medication. All attempts to establish such unity involve erroneous statements of fact, or of reasoning, or of both. More than once, in the present volume, is this illustrated; as by the admission (p. 241) of the special value of quinine in miasmatic diseases, of turpentine in hemorrhages, kousso in tapeworm, ergot in tardy parturition, colchicum in gout, arsenic in skin-diseases, creasote in vomiting, lime-juice in rheumatic fever, &c. And, again (p. 302), the individual and local character of particular diseases is recognized, in the assertion of a

"mysterious affinity between a certain organ and a certain material." The opinion is there expressed that specifics act chiefly by enabling the system to *tolerate* the acting morbid poison. This is applied to the cure of periodical fevers by quinine; and the experience of African navigators is alluded to, in favour of the explanation that it acts, whether as a curative or preventive, simply by *supporting* the organism during the time of exposure to the influence of the poison. Dr. Livingstone's latest accounts do not appear, however, to corroborate this; as his failure on the Zambesi to ward off fever by quinine, in his recent journey, seems to us to be explicable by the fact that the doses used were too small, being therefore *merely* tonic, and not specific or anti-miasmatic.

The question is asked and reiterated by Dr. Inman, "On what principle does a physician endeavour to restore health by means which would make a sound man ill?"[1] If any further answer be required, beyond the citations just made, we may still find it afforded in his own language.

"Experience teaches that a blister, which will produce an inflammation of the skin, and every part to which it is applied, is, under certain circumstances, instrumental in curing internal inflammations. She tells us that opium or alcohol in excess will produce delirium tremens, and that the same medicines in other doses seem to be instrumental in its cure. She tells us that arsenic and iodide of potassium, both of which produce inflammation of the skin, and sometimes even scales, papulæ, vesicles, or pustules, are very useful in the cure of such cutaneous inflammations as lepra, eczema, and rupia." "An irritant which will produce inflammation in a healthy part, will actually bring the same vessels to a healthy state when they are weakened by disease." (pp. 304, 305, and 324.)

Is not the question of *principle*, then, sufficiently answered? No modern physician will, at the same time, hesitate to join with the author in the declaration that "the principle of *doing evil to the constitution*, that good may come, is as false in medicine as it is in theology." The assertion that it is other than false has not met our notice anywhere in medical literature, nor do we believe its truth to be acted upon by any intelligent and well-educated practitioner. The quotation (p. 244), from Sydenham, of the motto "*Primum est non nocere*" is appropriate, not only on account of its own force, but because it shows what not only is, but has been, the *animus* of the leading minds of the profession.

A tone of medical scepticism in regard to all experience except his own pervades the whole of Dr. Inman's volume. We ought, however, to except also such recently asserted experience on the part of other practitioners as agrees with his own views. Partiality for these leads him to some very sweeping as well as hasty declarations. Thus (p. 237), it is dogmatically stated that "mercury converts adhesive into suppurative inflammation, *i. e.* a high into a low type;" and that "adhesive inflammations, as a rule, are recovered from *earlier* where mercury is not profusely used than where it is." It is said (p. 339) that "infantile diseases," as well as chorea and epilepsy, were once met by leeching and calomel, with, in the first named, lancing of the gums; but "a more correct modern experience treats *these complaints* by such tonics or other means as are likely to improve the constitutional vigour." The Italics are ours. Further (p. 347), an allusion is made to the statistical results of the comparison of the bleeding and non-bleeding modes of treatment in pneumonia. We should have supposed that this question, in regard to all the statistics which Dr. Inman quotes, might

[1] P. xii., Preface; and p. 225.

be considered as disposed of, and certainly not to the entire advantage of the purely expectant practice, by the thorough analysis of all the recorded facts in the paper upon the "Bloodletting Controversy," in the *British and Foreign Medico-Chirurgical Review*, July, 1858.

One of the most original chapters in the book before us is that (Chapter XVIII.) upon Counter-irritation. The proposition is started, and defended with considerable force, that the principal action of what are usually called counter-irritants, revulsives, or derivants, is really *direct*, by absorption of the agent used, upon the *diseased part*. Dr. Inman enunciates the law that "any material capable of being absorbed through the skin acts primarily and most energetically on the spot to which it is applied, and on the parts in its vicinity; and secondly, and more mildly, on the system generally." The corollary is derived from this, that blisters, or similar agents, do *harm* in the acute stages of ophthalmia, croup, pleurisy, pneumonia, and pericarditis; while they do good in the latter stages—"at that period, in fact, in which, could we use direct means, we should employ a solution of sulphate of zinc or of nitrate of silver to the inflamed surface." We are interested to observe, by this statement, that our author marks clearly a difference, as to therapeutic indications, between the acute and the terminal or chronic periods of inflammatory disease; a difference which, in the categorical exposition of his "broad principle" of practice, might appear to have been overlooked.

If, in the definition of this general principle, and of its foundations, as so far cited and examined, we have been able to obtain only partial satisfaction, the disappointment culminates when we find, upon the last page, their condensation, in a final doctrinal conclusion, as follows:—

"We may sum up our idea of the correct principle of treatment thus: In the early stage of any disease, when fever is present, the mildest medicines are the best, as the condition is a natural one, essential to the complaint, and having in previously healthy persons a constant tendency to abate after a definite period; under no circumstances should means be adopted to cure this fever which would of themselves suffice to make a healthy man seriously ill. As soon as the intensity of the symptoms subsides, and before the fever itself has gone, the plan of treatment is to be entirely changed. One day may be given to ascertain the condition of the vital power, and the direction it is taking; after that the physician will encourage the restorative powers of the system with medicinal or hygienic dietetic agents until health is restored.

"Special diseases require special treatment, yet the preceding principle is applicable to all."

Behold, then, in this universal formula, the *elixir vitæ* which the alchemy of our author's "modern experience" and "rational medicine" elaborates, to revivify the dogmatism and empiricism of the schools! We must acknowledge that, however profound our interest in medical advancement and reform, this summary transfusion does not altogether content us. It is much easier to tear down and destroy than to create—or to perfect, by a single effort, that science, whose past history shows that it can only grow to maturity by the slow accretion of ages. Nor, indeed, we apprehend, can those labours contribute very essentially to its development, whose spirit is rather that of the iconoclast than of the simple and direct ministry of nature.

H. H.

ART. XVI.—*A Practical Treatise on the Diseases of the Lungs, including the Principles of Physical Diagnosis.* By WALTER HAYLE WALSHE, M. D., Fellow of the Royal College of Physicians; Professor of the Principles and Practice of Medicine, and of Clinical Medicine, in University College, London; Physician to University College Hospital; Consulting Physician to the Hospital for Consumption. A new American from the third revised and much enlarged English edition. Philadelphia: Blanchard & Lea, 1860. 8vo. pp. 468.

WE are glad to welcome a new American edition of the third revised and much enlarged English edition of Dr. Walshe's practical treatise on the diseases of the lungs. The motto of this edition, "*Rerum ipsarum cognitio vera e rebus ipsis*," is well chosen. The opportunities enjoyed and diligently improved by our author of seeing and studying pulmonary disease, on the continent as well as in London, are well known, and the profession are glad to have the results, the views, the opinions of so competent, so practised an observer. A small octavo volume was published nine years ago, three hundred and eighty pages of which were devoted to the diseases of the lungs. We now have four hundred and sixty much larger pages appropriated to the same subjects, and another octavo volume is promised, containing a practical treatise on diseases of the heart and aorta.

This treatise on pulmonary disease, like the last, is divided into two parts. The first is taken up with a physical examination of the lungs and appendages. An introduction on clinical topography is followed by a setting forth of the methods of physical diagnosis. Articles on application of the hand, on mensuration in rest and in movement, of capacity for air, precede those on percussion and auscultation, and are much more full than in the first edition. The division of the work into sections, which are numbered, makes it more convenient for study and reference. We are glad to find the physiological variations in inspection, mensuration, percussion, and auscultation so fully set forth before those are set down which should be regarded as signs of disease. A student should know well what can be seen and heard in health before he tries to get hold of the symptoms of disease. A good deal is said of costal and abdominal respiration as found in the two sexes. It has been surmised that the freer use of the ribs in respiration in the female was connected with allowing for the cavity of the abdomen being at times distended by an impregnated uterus. Dr. Walshe does not find satisfactory proof of this, and he thinks that there is satisfactory evidence of the peculiar respiration of the female not being congenital, or observable in the first two or three years of life. We are told of physiological heteromorphisms, that they may be congenital or acquired, and general or partial. Again, it is well said that certain local irregularities of form may be either of physiological or of pathological origin; that disease and accident may produce the same alteration of shape; and that the mode of origin of such deviations can only be positively determined by the absence or presence of other signs denoting subjacent disease, or by the previous pathological history of the individual.

The mensuration of capacity for air has attracted attention, within a few years, even out of the profession, and men with spirometers may be seen in the thoroughfares of our cities, inviting all passers-by to ascertain in this way the size and soundness of their lungs. Dr. Walshe uses the terms

persistent and residual as applied to stagnant air. The first he applies to the volume of air remaining in the cells even after the complete collapse of the lungs in the dead body, and which cannot, by ordinary means at least, be artificially expressed from their tissue, though thoroughly removable by the influence of certain diseases, especially those causing fluid pressure on the pleural surface of the lung. The "residual" air cannot be expressed from the lungs during life by the strongest expiratory effort, and is expelled by collapse after death. The total breathing volume is divided into supplementary, tidal, and complementary. The volume of air expelled by a forced after an ordinary expiration may be termed supplementary, whilst that which can be inhaled by a forced after an ordinary inspiration is named complementary, and the tidal air is the volume passing to and fro in calm breathing. The experiments of Bungay, Hutchinson, Arnold, of Kentish and Herbst, of Dr. Pepper in our own country, are properly referred to, and it is well said that "the spirometer indicates when the lungs derive an insufficient supply of air, but tells nothing of the distribution of the inspired air, and gives no clue to the cause of the deficiency. So, too, the measured range between forced expiration and forced inspiration may be the same on the two sides, and yet the accompanying change of volume of the two lungs be very different in kind. With an expiratory force in excess the supplementary volume is more affected, and the complementary air is most affected with a predominance of inspiration." There is room for further study and experiment in these directions, and Dr. Walshe seems to us to have stated fairly and clearly what has been found out, and the applicability of our knowledge in the diagnosis of disease.

Percussion as applied to diseases of the lungs has been carefully studied, since the publication of the first editions of the treatise. The two terms, dull and clear, which have been used by English writers to indicate the varying characters of thoracic percussion-sounds, are properly said to be both inaccurate and inadequate. Skoda's terms, full and empty, are not satisfactory. Dr. Walshe devotes several pages to percussion in health, and in the sections on percussion in disease he sets forth the statical signs concisely and clearly. He describes variations in pitch, quality, duration, and resistance, and gives four types of morbid resonance—tonelessness or dulness, extra resonance, hardness, and muffled tone. He divides the hollow type into three varieties—the tubular, amphoric, and cracked metal; defines these terms, and points out under what conditions the sounds thus characterized are found. The movableness of area of morbid percussion signs is properly dwelt upon in this edition, and the reader will find a good deal of new matter in this part of the work, with a better arrangement of the whole.

In the section on auscultation, where the different characters of respiration in corresponding parts of the right and left chest are dwelt upon, our author tells us of having devoted much time to the examination of this point at the apices of the chests, and of being obliged to modify opinions formerly expressed. He admits that there is no excess, as a constant condition, in the length and intensity of the respiration-sounds in either upper region of the chest, and no necessary difference of pitch and quality. But, he tells us, "appreciable differences in these points are of sufficient frequency in perfectly healthy chests to impress upon us the wisdom of caution in ascribing to incipient disease very slight inequalities in the two sides, even where pulmonary or dubious general symptoms may entitle us to look for something physically wrong in the lungs." At the same time, the infraclavicular regions are tabularly compared, to show that a greater tendency

exists to bronchial character in the respiration at the right front apex than at the left, while excess of loudness and duration of respiration may pretty frequently be looked for at the left. Dr. Walshe adheres mainly to the divisions he previously made of modifications of respiration in disease. He speaks of harsh bronchial and of blowing inspiration, the latter sometimes simple and sometimes hollow. Simple blowing respiration may be diffused or tubular, whilst the hollow variety may be cavernous or amphoric. A change may take place from diffused to tubular blowing, and the explanation, stated as conjectural in the first edition, connected with diffused blowing respiration proceeding from a number of small bronchi, and tubular from a few larger ones, is admitted not to be verified in a case subsequently observed. The mode of production of bronchial respiration and of bronchophony is very fully discussed. The objections to Skoda's ideas of consonance are set forth at length, and seem to Dr. Walshe conclusive against the pure doctrine of consonance, while they show that if consonance plays any part in the production of bronchophony, it must be a subsidiary, rare, and accidental one. Then, whilst the fact is well established of the bronchophonic voice being louder than that transmitted through the stethoscope from the larynx, three ways in which a sound may be reinforced—union, resonance, consonance, and echo—are pointed out, and the share taken by each set forth at some length. In all this Dr. Walshe shows that he has studied his subjects again and again, that he has made himself acquainted with the researches and opinions of those who have made these subjects their especial study, and that he appreciates the difficulties in ascertaining the conditions of the lungs and thoracic walls, and in applying the principles of acoustics, a branch of human knowledge which is not yet able to embrace, arrange, and properly classify all the phenomena belonging to it.

The first section of the second part of this work is appropriated to diseases of the thoracic parietes; pleurodynia, thoracic myalgia, intercostal neuralgia, intercostal neuritis, have each a proper space assigned them, and then something is said of various parietal diseases. In the section on bronchitis the affection of the larger and medium-sized tubes is considered separately from general and capillary bronchitis. Chronic bronchitis is considered apart, and the varieties of bronchitis, with the causes on which they depend, are clearly set forth. In the articles on pneumonia and consumption, whilst nothing is neglected that may contribute to an accurate diagnosis, a good deal is said on treatment. Here, too, the author shows that he keeps up with opinion and science as it varies and advances from year to year. We have evidences of sound judgment, of freedom from prejudice, which inspire confidence in the rules and precepts for treatment. Our author is free from hobbies, and shows that he can modify opinions previously expressed, and that though he has written a book and propounded theories, he keeps himself in a condition to modify precepts and change opinions in accordance with subsequent observation. For his statements he refers to cases. We are sorry that these cannot be set forth, too. A valuable volume could be made from cases referred to by Dr. Walshe. He tells us, however, where these are to be found, and refers to them for a verification of his statements. We especially like this feature in Dr. Walshe's work. The accuracy which characterizes the legal profession must be attributed in great part to its members being compelled to make statements in accordance with facts, that are under the observation of judges, juries, and opposing counsel. A clergyman in the pulpit, and a physician in a sick-chamber, speak without fear of immediate contradiction,

and thus may easily fall into loose ways of observation and reasoning. We like, then, a medical author who is willing and able to append to every statement the grounds of it, and who is not afraid to invite a close examination into rules, laws, opinions, or theories set forth by him. We like one, too, who appreciates the extent and difficulty of his work, and who is ready to use all opportunities to extend his knowledge and improve his faculties. We can cordially recommend this last American edition of Dr. Walshe's treatise to all students and practitioners. G. C. S.

ART. XVII.—*Currents and Counter-currents in Medical Science.* By OLIVER WENDELL HOLMES, M. D., of Boston. Annual Address before the Massachusetts Medical Society, 1860.

THIS address has attracted more attention than falls to the lot of most medical addresses. It awakened a very decided opposition in the Society before which it was delivered, notwithstanding the high respect entertained for Dr. Holmes by its members, and it was denounced in no gentle terms at the meeting of our late National Association at New Haven, by some of the members from Massachusetts, in a discussion on the subject of medical education. And besides this, some of its passages have been eagerly caught up by quacks, and have even been incorporated by some of them in their advertisements. These facts have been considered by many as showing conclusively that the address is to be condemned as a libel on our profession. Let us, with the address before us, inquire whether this be really so.

We would premise a few things before entering upon the examination of the article. If abuses exist in our profession, of whatever kind they may be, we are not to avoid an exposure of them from the fear that our enemies will use what we say for our hurt. The profession stands on too high and safe ground to fear anything on this score. And it is to be said further, that the very fact that we are willing to discuss freely and openly such matters, wins for us the respect of the community as a body of fearless, honest, truth-loving men.

But there is great necessity of being cautious not to overstate in such discussions. There is much danger of falling into this error. It is so very common in those who are endeavouring to produce reforms of any kind, that it is expected as a matter of course. And sometimes it seems to be necessary to provoke opposition by ultra views, in order to awaken the feeling requisite for a proper examination of the subject. The grave, cautious utterances of a calm, thoughtful wisdom, weighing carefully every word, often attract but little attention, at least from the great multitude; but let the substantially same sentiments be spiced with a little ultraism (as are some of the sentiments of Dr. H. in this address), and be thrown out with such freedom of language and of illustration as to leave some doubt as to the extent of their meaning, and a mental boiling and surging are produced in the whole thinking mass, in place of the mere ripple which was seen before. If the exact truth will produce the result desired, it is all the better; but the establishment of truth in the public mind is often to be achieved only by having it pass through the agitation referred to, however distasteful it may be to those who have an acute and

clear sense of the true, and however injurious it may be temporarily to certain individual interests or even to the truth itself. In this point of view, even granting that the severe criticisms which have been made upon Dr. Holmes' address are all just, we think a good effect on the whole may result. The great subject brought out in it, the relations of Nature and Art in the treatment of Disease, has not attracted sufficient attention from the mass of medical men. The few have thought upon it much and thoroughly; but the many have had their easy routine of practice but little disturbed by the discussions that have of late been going on in regard to this subject; and it is well that they should be stirred up, even if it be at the expense of a little temporary rejoicing of the whole motley crew of quacks, from genteel homœopaths down to vulgar Indian doctors.

Further than this, we think that much less injury is done to the interests of the profession by unguarded attacks on the errors and abuses prevalent among us, than by the extreme sensitiveness which some medical men manifest to such attacks. Their apprehensions are considered by the enemies of our profession as sure symptoms of its weakness. Let discussion have its widest freedom, and though ill-judged things may be said, let us not be disturbed, for in the general attention awakened, the exact truth will not only find abundant utterance, but will at length be firmly established in the public sentiment of the profession.

The object of Dr. Holmes in his address is to favour a general current which has manifestly been setting in during the past twenty-five or thirty years in favour of assisting nature in the treatment of disease, and in opposition to a predominant dependence on art. That there is much difference of opinion in the profession as to the relative importance of the two agencies is very obvious; some even, practically if not theoretically, placing very little to the account of nature, while others suppose that nature does nearly all the work in the cure of disease, and that medicine if commonly not injurious, is at least not of much value. But there are all shades of difference, and the profession are not gathered into two distinct parties, as would seem to be implied by the language of Dr. Holmes. We quote a single paragraph on this point:—

"We who are on the side of 'Nature' please ourselves with the idea that we are in the great current in which the true intelligence of the time is moving. We believe that some who oppose, or fear, or denounce our movement, are themselves caught in various eddies that set back against the truth. And we do most earnestly desire and most actively strive, that medicine, which, it is painful to remember, has been spoken of as 'the withered branch of science' at the meeting of the British Association, shall be at length brought fully to share, if not to lead, the great wave of knowledge which rolls with the tides that circle the globe."

He speaks, too, here and there, of the "seeming heresy" which he advocates, as if they who have proclaimed opinions similar to those of his address had been regarded by the profession at large almost as heretics. This is certainly not true. However strong the opposition of some has been to these opinions, they have obtained a lodgment in the general medical mind, and the history of our art for the last quarter of a century shows that they have had a very great influence in moulding medical practice, more indeed than would appear from the opinions which are expressed from time to time in our medical journals. Let any one look back upon his own experience during that period, and recall also his observation of the practice of physicians with whom he has had professional intercourse, and he will see this to be true. Perturbing remedies are used far less than

they were, and nature is watched and trusted in many cases in which, thirty years ago, she would have been plied with disturbing medication to produce the desired result. In one part of his address Dr. Holmes speaks of this change, alluding to some of its causes, thus :—

"Our art has had two or three lessons which have a deep meaning to those who are willing to read them honestly. The use of water-dressings in surgery completed the series of reforms by which was abolished the 'coarse and cruel practice' of the older surgeons, who with their dressings and acrid balsams, their tents and leaden tubes, 'absolutely delayed the cure.' The doctrine of Broussais, transient as was its empire, reversed the practice of half of Christendom for a season, and taught its hasty disciples to shun their old favourite remedies as mortal poisons. This was not enough permanently to shift the presumption about drugs where it belonged, and so at last, just as the sympathetic powder and the unguentum armarium came in a superstitious age to kill out the abuses of external over-medication, the solemn farce of homœopathy was enacted in the face of our own too credulous civilization, that under shelter of its pretences the 'inward bruises' of over-drugged viscera might be allowed to heal by the first intention. Its lesson we must accept, whether we will or not; its follies we are tired of talking about. The security of the medical profession against this and all similar fancies, is in the average constitution of the human mind with regard to the laws of evidence."

Perhaps, the chief reason after all for the feeling which this address has provoked, is to be found in the somewhat false attitude in which Dr. Holmes placed his audience, and with it the profession at large. We have no doubt that a full canvassing of views would show that most of those who heard him agree substantially with him, that is, they believe that nature is the chief curer of disease, and the only difference of opinion would be found to be one of degree, not of kind, some even going beyond him in a reliance upon nature. But he evidently assumes to the contrary, and in the conclusion talks of the rights of minorities in such a manner as to intimate that he supposes himself to be in a minority so small as to be in danger of being crushed by the majority. Let us not be understood to mean that he assumes a defiant air. So far from this, he uses the language of appeal, and says: "We must be tolerant, for the thought which stammers on a single tongue to-day, may organize itself in the growing consciousness of the time, and come back to us like the voice of the multitudinous waves of the ocean on the morrow."

Though we do not think that Dr. Holmes appreciates suitably the extent of the change in medical practice in favour of "Nature," yet we agree with him "that, after all which has been said, the community is still overdosed." The causes of this adherence to over-dosing he thus gives :—

"Part of the blame of over-medication must, I fear, rest with the profession for yielding to the tendency to self-delusion, which seems inseparable from the practice of the art of healing. I need only touch on the common modes of misunderstanding or misapplying the evidence of nature.

"First, there is the natural incapacity for sound observation, which is like a faulty ear in music. We see this in many persons who know a good deal about books, but who are not sharp-sighted enough to buy a horse or deal with human diseases.

"Secondly, there is in some persons a singular inability to weigh the value of testimony; of which, I think, from a pretty careful examination of his books, Hahnemann affords the best specimen outside the walls of Bedlam.

"The inveterate logical errors to which physicians have always been subject, are chiefly these :—

"The mode of inference *per enumerationem simplicem*, in scholastic phrase; that is, counting only their favourable cases. This is the old trick illustrated in

Lord Bacon's story of the gifts of the shipwrecked people, hung up in the temple. Behold! they vowed these gifts to the altar, and the gods saved them. Ay, said a doubting by-stander, but how many made vows of gifts and were shipwrecked notwithstanding? The numerical system is the best corrective of this and similar errors. The arguments commonly brought against its application to all matters of medical observation, treatment included, seem to apply rather to the tabulation of facts ill-observed, or improperly classified, than to the method itself.

"The *post hoc ergo propter hoc* error; he got well after taking my medicine; therefore in consequence of taking it.

"The false induction from genuine facts of observation, leading to the construction of theories which are then deductively applied in the face of the results of direct observation. The school of Broussais has furnished us with a good example of this error.

"And lastly, the error which Sir Thomas Browne calls giving 'a reason of the golden tooth;' that is, assuming a falsehood as a fact, and giving reasons for it, commonly fanciful ones, as is constantly done by that class of incompetent observers who find their 'golden tooth' in the fabulous effects of the homœopathic materia medica—which consists of sugar of milk and a nomenclature.

"Another portion of the blame rests with the public itself, which insists on being poisoned. Somebody buys all the quack medicines that build palaces for the mushroom, say rather, the toad-stool millionaires. Who is it? These people have a constituency of millions. The popular belief is all but universal that sick persons should feed on noxious substances. One of our members was called not long since to a man with a terribly sore mouth. On inquiry he found that the man had picked up a box of unknown pills, in Howard Street, and had proceeded to take them, on general principles, pills being good for people. They happened to contain mercury, and hence the trouble for which he consulted our associate."

In relation to the influence of the public, Dr. Holmes very justly says that "the outside pressure is immense upon the physician, tending to force him to active treatment of some kind." Homœopathy, that greatest masterpiece of quackery, meets this demand. It could not stand a moment in the popular favour if it did not. If there were not supposed to be an unusually active potency in the globules, nobody would take them. And we may say here, that the reason that homœopathy has a stronger hold upon the community than other forms of quackery is, simply because, while it caters to the popular taste by a show of powerful medication, it does no positive harm, and leaves to nature alone the work of cure.

In connection with the popular sentiment, Dr. Holmes notices some old superstitions, the influence of which remains more or less to the present day. "One of the most ancient is," he says, "that disease is a malignant agency or entity, to be driven out of the body by offensive substances, as the smoke of the fish's heart and liver drove the devil out of Tobit's bridal chamber, according to the Apocrypha." This notion, though pretty nearly expelled from the medical mind, still lingers in the mind of the public.

This and other superstitions, now discarded by educated medical men, still appear in the various forms of quackery. The fondness for the nauseous and disgusting in medicine is seen even in that very refined form of quackery, homœopathy. Dr. Holmes thus alludes to this:—

"Even now, the homœopathists have been introducing the venom of serpents, under the learned title of *Lachesis*, and outraging human nature with infusions of the *pediculus capitis;* that is, of course, as we understand their dilutions, the names of these things; for if a fine tooth comb insect were drowned in Lake Superior, we cannot agree with them in thinking that every drop of its waters would be impregnated with all its pedicular virtues they so highly value. They know what they are doing. They are appealing to the detestable old superstitious presumption in favour of whatever is nauseous and noxious as being good for the sick."

Besides those agencies which operate everywhere on the profession, tempting it to over-medication, Dr. Holmes thinks that there are some special American influences urging the practitioners of this country to an "audacious handling of nature." He attributes great influence to Dr. Rush in shaping American medical practice. We give the following extract from what he says of this, and what he says of the characteristics of the American medical mind:—

"Dr. Rush must have been a charming teacher, as he was an admirable man. He was observing, rather than a sound observer; eminently observing, curious, even, about all manner of things. But he could not help feeling as if Nature had been a good deal shaken by the Declaration of Independence, and that American art was getting to be rather too much for her—especially as illustrated in his own practice. He taught thousands of American students, he gave a direction to the medical mind of the country more than any other one man; perhaps he typifies it better than any other. It has clearly tended to extravagance in remedies and trust in remedies, as in everything else. How could a people which has a revolution once in four years, which has contrived the bowie-knife and the revolver, which has chewed the juice out of all the superlatives in the language in Fourth of July orations, and so used up its epithets in the rhetoric of abuse, that it takes two great quarto dictionaries to supply the demand; which insists in sending out yachts and horses, and boys to out-sail, out-run, out-fight, and checkmate all the rest of creation; how could such a people be content with any but 'heroic' practice? What wonder that the stars and stripes wave over doses of ninety grains of sulphate of quinine,[1] and that the American eagle screams with delight to see three drachms of calomel given at a single mouthful?"[2]

He goes on to notice still other influences in the following language:—

"Add to this the great number of medical journals, all useful, we hope, most of them necessary, we trust, many of them excellently well-conducted, but which must find something to fill their columns, and so print all the new plans of treatment and new remedies they can get hold of, as the newspapers, from a similar necessity, print the shocking catastrophes and terrible murders.

"Besides all this, here are we, the great body of teachers in the numberless medical schools of the Union, some of us lecturing to crowds who clap and stamp in the cities, some of us wandering over the country, like other professional fertilizers, to fecundate the minds of less demonstrative audiences at various scientific stations; all of us talking habitually to those supposed to know less than ourselves, and loving to claim as much for our art as we can, not to say for our own schools, and possibly indirectly for our own practical skill. Hence that annual crop of introductory lectures; the useful blossoming into the ornamental, as the cabbage becomes glorified in the cauliflower; that lecture-room literature of adjectives, that declamatory exaggeration, that splendid show of erudition borrowed from D'Israeli, and credited to Lord Bacon and the rest, which have suggested to our friends of the medical journals an occasional epigram at our expense. Hence the tendency in these productions, and in medical lectures generally, to over-state the efficacy of favourite methods of cure, and hence the premium offered for showy talkers rather than sagacious observers, for the men of adjectives rather than of nouns substantive in the more ambitious of these institutions."[3]

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[1] "More strictly, ninety-six grains in two hours.—Dunglison's Practice, 1842, vol. ii. p. 520. Eighty grains in one dose.—Ibid., p. 536. Ninety-six grains of sulphate of quinine are equal to eight ounces of good bark.—Wood & Bache."

[2] "Pereira, ii. 614. Quoted from Christison's Treatise on Poisons."

[3] "'Ingeniorum Græciæ flatu impellimur. Palamque est, ut quisque inter istos loquendo polleat, imperatorem illico vitæ nostræ necisque fieri.'—(Plin. Hist. Mundi, xxix. 1.)—I hope I may use the old Roman liberty of speech without offence.

In regard to both of the preceding extracts, it may be said that for the sake of point and effect, in conformity with a license commonly taken in addressing popular assemblies, and sometimes those which are not strictly popular, the truth is broadly caricatured; and yet there is some truth in it, and as medical men we ought to be willing to see it, that we may cast about to remedy the evils alluded to. There *is* too much of the go-ahead in American medicine; and yet, with the American practical good sense, the active element may be so softened down and regulated, that the American profession may assume a position superior to that of any country. We do not agree with Dr. Holmes in his praise of French practice. So far as we are acquainted with it, there is often a mixture of the inert and the positive which is inconsistent, and often ridiculous. For example, in the two volumes of cases of Fever reported so minutely by Louis, we find in the midst of his ptisans and syrups, he occasionally prescribes so positive a remedy as bleeding, and generally under circumstances which most American physicians would consider as absolutely forbidding it. We might give examples from other quarters in regard to the use of other remedies. Besides, if we go back to the time before Broussaism had arisen, we shall find evidence that the positive medication of Americans was borrowed quite as largely from the French as from the English. At that time, Bichât, speaking of the Materia Medica, of course having in view especially that of his own country, holds this strong language: "It is not a science for a methodical mind; it is a shapeless assemblage of inaccurate ideas, of observations often puerile, of deceptive remedies, and of formulæ as fantastically conceived as they are tediously arranged."

As to the abundance of journalism and its attendant evils, we do not think Dr. Holmes speaks too strongly. This disposition to write and print has accumulated a mass of material, a large proportion of which is of no value. If it were a possibility to winnow it properly, how much of it would be found to be chaff! As to what may be called the recorded *experience* of the profession, how much to-day is there of real practical value to the profession in all the volumes of, for example, Braithwaite's Retrospect? Nay, more, how much of all this experience has not been absolutely disproved by after experience? Then, as to medical schools, it is plain enough that popular tactics have been so far adopted as to threaten seriously the dignity and welfare of the profession; and therefore a probing is called for, and no harm will be done if it be a little rude and free. It will help on and render more practical the efforts of the American Medical Association to bring the schools into the right condition.

That passage in this address which has perhaps given the most offence to some of the profession, and the most satisfaction to the enemies of "regular medicine," is the following:—

> "Throw out opium, which the Creator himself seems to prescribe, for we often see the scarlet poppy growing in the cornfields, as if it were foreseen that wherever there is hunger to be fed there must also be pain to be soothed; throw out a few specifics which our art did not discover, and is hardly needed to apply; throw out wine, which is a food, and the vapours which produce the miracle of anæsthesia, and I firmly believe that if the whole materia medica, *as now used*, could be sunk to the bottom of the sea, it would be all the better for mankind—and all the worse for the fishes."

Before entering on the examination of the main point of this passage, we will make a passing remark upon some of its minor points. As to the poetry of Dr. H. in regard to the juxtaposition of corn and poppies, it is

nothing but poetry. As well might we say that stramonium seeds were made for children to eat, because this plant grows by roadsides, and near old buildings. Then, as to the assertion that wine is food, we do not believe that this is true of it, precisely as it is of bread. To say nothing of the chemistry of the question, which we do not deem to be fully settled, it accords with our observation that wine cannot be taken with impunity, quite as freely as what we ordinarily call food; we do not need any *personal* experience to make us know that some effects come from it which are not to be attributed to giving the stomach too much to do. Again, if Dr. Holmes means by the expression in relation to specifics, is hardly "needed to apply," that science and good judgment are not needed in their application, we should decidedly demur. On this point, it will suffice barely to refer to the disastrous results which have come from an indiscriminating use of quinine, domestic, quackish, and even professional, in the treatment of intermittent fever.

But to the main point of the passage; let us look at it fairly.

If Dr. Holmes means by the expression, *as now used*, to include the use by quacks and by the community at large, as well as that by physicians, then there is much truth in the assertion, even if we include in it those articles which he excludes. We verily believe that if at this moment some spell should come over the whole face of society which should forbid the swallowing of any medicinal article, and consign all the sick to good nursing alone, the bills of mortality in all Christendom would be at once lessened, for the disastrous results which come both from the undiscriminating medication of abounding quackery, and from the routine practice of some in the profession, more than counterbalance the good results of the discriminating medication of judicious physicians. And it might be all the better for some, if this spell produced a belief in homœopathy, for this, while really no medicine is taken, would quiet the agitated nerves of those who would be full of fears because nothing is done, and thus nature might more effectually do her work of cure.

It will be granted on all hands by medical men, that in the practice of pains-taking, cautious, judicious physicians much good comes from positive medication. No one denies this, except the homœopathists, and their denial is based on statistics, especially the statistics of the famous Homœopathic Hospital at Vienna, under the care of Dr. Fleischmann. It is claimed by them, that a comparison of its mortality with that of most hospitals under the care of "regular" physicians, makes a large showing in favour of homœopathic practice. The mortality was 6.4 per cent. in 6,500 cases treated during eight years, while the average mortality of the largest hospitals of London during four years was 8.4 per cent. Here is a difference of 2 per cent. in favour of the Vienna hospital. If the comparison be a fair one—if there be no fallacy—then, assuming that Dr. Fleischmann was *honest* and adhered to the infinitesimal doses, the inference is clear, that patients on the whole do better with good nursing alone, and mere placeboes for medicine, than under the cautious and judicious medication which is practised in our hospitals.

But there is fallacy. The gross results do not give us the real truth in regard to the point in question. A glance at the details reveals at once the fallacy. Fortunately for the truth, but unfortunately for homœopathy, Fleischmann was either honest enough or incautious enough to give us the requisite details; and these show beyond all dispute, not merely that the inference which the homœopathists draw from the gross results is false, but

that the comparison in view of the details tells largely in favour of the practice in the "regular" hospitals.

The mortality of hospitals is varied very much by the circumstances which influence the admission of patients. If these are such as to insure the admission of a large proportion of severe and incurable cases, the mortality will of course be high. This is true of large hospitals situated in the midst of densely populated cities, taking in all they can, having a large number of inmates that have received serious injuries, and rejecting, from their crowded state, applications from mild cases. Now, Fleischmann's hospital was situated not in the midst of Vienna, but outside; and, from the details which were given, it is clear that some pains were taken to exclude cases that were incurable, and gather in those which were curable. Thus in a comparison made by Dr. Simpson between this hospital and an Edinburgh hospital, with about the same number of cases treated, in the former there were 301 cases of common quinsy, and only 34 in the latter, 110 cases of chicken-pox in the former, and only 2 in the latter, &c.; while of diseases ordinarily incurable there were of consumption 98 in the former, and 276 in the latter, of palsy 5 in the former, and 103 in the latter, &c.[1] Certainly with such differences, if homœopathy were good for anything, the mortality ought to have been very much less than 6.4 per cent. Even with circumstances much less favourable than those of the Vienna hospital, and with no attempt to regulate admissions, many "regular" hospitals show a much less percentage of mortality. Thus, as cited by Simpson, that of the Dundee Hospital is 5.1 per cent., that of the Aberdeen Hospital 4.6 per cent., that of the Inverness Hospital 4.3 per cent., that of thirty provincial hospitals, taken together, 4.4 per cent., and that of the English military hospitals only 2 per cent.

Taking it for granted that Fleischmann truly followed out the infinitesimal practice, in other words, really gave no medicine at all, we have, in the light of the details which he has given us in regard to the diseases treated, the data for a definite conclusion, viz., that the practice in our hospitals is considerably more successful than leaving patients to nature alone, with good nursing and favouring attendant circumstances.

But the practice in our hospitals can hardly be said to represent fairly that of the profession at large; it is, on the whole, more cautious, and trusts much more to nature, and this for obvious reasons. The physicians of our hospitals are better physicians than the great mass of medical men; and they are, for the most part, wholly exempt from that outside influence which tends to produce over-medication.

We have no means of coming at a definite answer to the question, whether medicine as at present used by the profession at large is productive of more good than harm; but this we can say, that, in view of the abundant evidence of the fact, that nature is the chief curer of disease, those who very generally interfere with her efforts by perturbing remedies, do not merely fail to do as much good as they should, but actually do more harm than good. We refer to those who practically act upon the idea of Dr. Rush, who says, "It is impossible to calculate the mischief which Hippocrates has done by first marking nature with his name and afterwards letting her loose upon sick people; millions have perished by her hands in all ages and countries." With them, medicine is all in all, and they have no belief in any general natural tendency of the system to right itself.

[1] The details of this comparison are very fully given in our Review of Simpson's book on Homœopathy, in the January number for 1854 of this Journal.

That the majority of physicians over-medicate still, notwithstanding all that has been written on this subject, we are inclined to believe; but whether they over-medicate enough to do more harm than good is a question that cannot be definitely answered. There are all degrees of positive medication in the profession, and few scientific physicians at the present day either practically or theoretically indulge the ultra views of Dr. Rush. It is not at all essential to settle the question which we have stated, but it is enough for all practical purposes to start the inquiry and look at the facts which bear upon it. Thought, serious, faithful thought on this subject is what is needed to make our experience teach us individually what the true relations of art and nature are in the treatment of disease.

The address of Dr. Holmes is calculated to promote such thought, and we may perhaps add to this result by throwing out, in a familiar way, a few suggestions besides those which we have made in the review of this address.

When we began the practice of medicine, positive medication was quite in the ascendant, though the false theory with the somewhat true practice of Broussais threatened its overthrow. Then tartarized antimony and calomel and bleeding were prominent remedies in all febrile diseases; emetics were common, especially in the onset of disease; and the general idea was that disease was to be actively attacked by the physician. We remember at this time of being much interested in an account given by a brother physician of an article in some foreign journal, in which the writer attributed the frequent want of success in treating such diseases as scarlatina to a disregard of the natural succession of events in these maladies—a foreshadowing of that idea so prominently brought out shortly after by Dr. Bigelow, in his paper on Self-limited Diseases.

We were also much impressed with the ideas of an old physician who with sturdy good sense resisted the polypharmacy of the times, and who was often wont to remark that it took as much knowledge to know what *not* to do as to know what to do. He often descanted on the evils which he had himself seen to result from indiscriminate medication in various diseases, and especially in the treatment of smallpox. He had seen much of this malady, and so strong was the popular trust in medicine in the treatment of it, that he resorted to bread pills, producing apparently by them results which astonished both the public and his medical brethren.

In the early part of our practice a case occurred which taught us some valuable lessons. A feeble old lady was attacked with colicky pains, and at length stercoraceous vomiting ensued. In order to restore the true peristaltic action, in obedience to the common practice of the times, a terebinthinate enema, among other things, was used. But the turpentine itself was vomited, as was proved by the very strong odour of it in the egesta; and it was manifest to us that disturbing treatment was worse than useless. A quieting course was therefore pursued. We found that small quantities of paregoric and bread coffee would stay on the stomach, and nothing else would. When quiet was at length partially restored, the terebinthinate enema was again used, for the purpose of producing a proper action of the bowels, this being at that time considered a very important matter in most cases, Hamilton's book on purgatives having produced in the profession a general tendency to the use of that class of articles. The stercoraceous vomiting was at once renewed. It was resolved now to pursue the quieting plan to the end. The result was a perfect restoration to health, although there was no passage from the bowels for nearly three weeks from the beginning of the attack. The course pursued in this case does not seem at

all strange to us now, but it certainly was in opposition to the general current at that time; and if a consultation had been held, it *might* have produced at least some embarrassment, especially if age, armed with all the authority of Hamilton on purgatives, had come down upon the young practitioner. Other cases occurred, of various kinds, impressing upon the mind the curative power of nature, the necessity of regulating the circumstances of the sick, and the importance of means and remedies which quiet the turmoil of disease and relieve its suffering.

It was quite a prevalent idea in the profession, during the first quarter of this century, that opiates only palliate, and never cure disease.[1] Other remedies were used for the purpose of effecting the cure, while the opiates were expected simply to relieve pain and allay restlessness, and thus enable the patient to bear better the searching and expulsive processes of these curative remedies. Besides the decided, and apparently direct curative influence of opium in many painful disorders, as colic for example, it has commonly a greater share of *indirect* curative influence than any other article of the materia medica, because it relieves the agitation and suffering of disease, and thus enables nature to work more effectively in its removal.

How many new modes and remedies have challenged our belief within the past twenty-five years, and yet how few of them have stood the test of prolonged and varied experience! Still, great advances have been made, not so much in discovering new remedies, for there have been few, but in settling principles, and especially in determining the circumstances which should govern us in the application of remedies that have long been in use in the profession. The chief advance has been, in fact, in a sort of sifting of old experience, and we believe a still greater work remains to be done in this same direction. It is not so fascinating, especially to the young adventurer, as the striking out of paths entirely new, but it will bring as substantial rewards. The field is a broad one, and there is enough yet unsettled in medicine to call for strict, patient, and abundant observation.

An experience of a quarter of a century have we had in this country with the treatment of cholera, and yet who will venture to say what the profession has settled upon as *the* proper course of treatment generally for this disease? It must, we think, be the conclusion of every judicious physician, that if this malady presents itself for treatment, he can only apply his general principles, taking especial care not to meddle too much, even in obedience to them. All kinds of remedies and modes of practice have been lauded in turn. Let us take one of the remedies, and see to what conclusions medical men have been driven in regard to it. We will suppose that we see a man recover from cholera after taking enormous doses of calomel. What does it prove? That the calomel cured him? Not as a matter of course. Suppose that you see another man just like him recover without taking any calomel. How now? You infer at least that calomel is not the *sine qua non*. You go further, and ask the question whether the first patient did not recover in spite of the calomel. Especially do you harbour this conclusion, when you come to find that some patients recover in spite of various strong modes of practice, even the perturbing, almost parboiling processes of Thompsonism. And when you find, in addition to all this, that recoveries from the same alarming condition sometimes occur with the mere show of medication of the

[1] This notion is prevalent in the community at large now, and it is not universally discarded by the profession. It is only a little while since that we heard a prominent teacher of medicine avow in the most decided terms his disbelief of the curative power of both opiates and anæsthetics.

homœopathist, you come to the belief that here as well as in most other diseases nature is the chief curer, and that in your medication you must be very careful not to interfere with, but to assist, her salutary efforts. So much for calomel in large doses. Though there is a stronger presumption in favour of this article in smaller doses, has our experience yet fairly settled the point in regard to them? I think not.

A much longer experience have we had with the yellow fever than with cholera, and yet how stands our record here? Is it not the upshot of all our experience that there has not been found any medication that can be relied upon as producing any decided curative influence, and that nature, with judicious nursing, is to be trusted to for the most part?

And here we would drop a suggestion or two in relation to the two diseases mentioned and other epidemics. Every careful observer cannot fail to have noticed that there is in them a something beyond the outward sensible manifestations, the force of which cannot be estimated, for, besides being unknown in its character, it is not by any means always in proportion to these manifestations. And it is this something which has the most to do, often at least, with the question of life and death. Should this unknown element be overlooked? Does it not imperatively demand caution in the practitioner in the employment of his remedies? What judicious physician dare deal, for example, with epidemic dysentery as with sporadic?

In many cases of such diseases the strong impression of the cause, whatever it may be, prostrating the vital forces, is often enhanced by the added strong impression of exhausting remedies. And no doubt many a patient is fortunately saved from this result by the insensibility of the system to other agencies, which we sometimes see produced by overwhelming disease.

The diseases of which we have spoken are important parts of that wide field which invites to the labour of rigid observation. The fact that so little has been settled in them is by no means discouraging, for observation here has been hitherto, for the most part, wrong in its aims. The search has been after what probably never can be found—some mode or remedy exclusively applicable in each disease. Let observation hereafter have for its aim the establishment of principles (that is, broad general facts, not theories or suppositions), and of the relations of nature and art in the treatment of those diseases, and especially the discovery of the proper limitations of the latter, and these portions of the field will then be relieved from the painful uncertainty which now rests over them.

We are not among those who would decry our art. We do not believe that medicine is "the withered branch of science," though it was so spoken of at a meeting of the British Association. Indeed, we think Dr. Holmes guilty of a dereliction of duty in not indignantly repelling the slander, instead of quoting it in a manner which seems to betoken a justification of it. We believe our art to be, taking all things into consideration, in as good a state of advancement as the other sciences. For look at the basis on which the estimate of relative condition should be made. Are we not to take into consideration the difficulties which each has to contend with? And doing this, we have no fears for our science in the comparison. There is no science in which the difficulties which beset investigation are so great, for there is none in which the causes contributing to produce the phenomena to be investigated are so numerous and complex in their action. The physician is to observe not matter alone, as is the chemist, nor spirit, as is the metaphysician, but matter and spirit mysteriously united, and that too in mechanism wonderfully elaborate and

intricate. And this is not all. He is to observe not the natural, orderly movements of this mechanism, but movements disordered by numerous and varied agents, and then acted upon by agents applied for the purpose of restoring their order. Here is difficulty upon difficulty. And yet we look with pride upon the great principles of medicine which have been definitely settled, the remedial means discovered, and the mass of minute details gathered in relation to the circumstances, which modify the application of these principles and remedies in the treatment of individual cases of disease. The very difficulties encountered add to the dignity of our science, and the positive achievements which have been made in spite of them give a glorious record of the past, and hold out bright promise in the future.

It has been fashionable of late for thinking men outside of our profession to decry our science because there is so much in it that is unsettled. We have heard it asserted by one of the most prominent divines of our country, that there always must be so much of uncertainty in regard to the effects of remedies, that practical medicine can hardly be expected ever to rise to the dignity of a science. But we would even claim that medicine *as a science* stands above theology. Theology has less difficulties to contend with than medicine, for it has "the law and the testimony" to which it can appeal, and yet at this present time medicine is in a better condition than theology, because it has more thoroughly cast off the theorizing spirit, and devoted itself to the single aim of the establishment of facts and principles. And this leads us to say that our profession stands on a vantage ground entirely new in this middle of the nineteenth century. Theories have hitherto had great sway over the medical mind, but we trust that we have seen the passing away of the *last* general theory of medicine, that of Broussais, and that the reign of rational observation will henceforward be an undisputed reign.

It is of primary importance that this observation should be directed aright. We have already hinted that our great aim should be to discover the exact circumstances which admit of positive medication, and those which forbid it. But how can this be done? Not by records of general conclusions arrived at by practitioners—these are sometimes of value, that is, if the observer be a good one; but we have had altogether too much of this. Not by records of extraordinary cases—these excite wonder, but teach us little commonly about the treatment of ordinary cases. Not by records of successful cases alone, for here we have but a part of the facts, and sometimes that part which affords us the least instruction. What we want is, faithful, minute records of cases as they arise—the successful and the unsuccessful, the mild and the severe. We want a true picture of actual practice. This will involve great labour it is true; but it is labour which will bring great rewards. It will afford us the means of comparing each his own practice with that of others, and definite results will thus be realized which cannot be obtained in any other way. Such records of any disease, furnished by a dozen accurate, skilful, and honest observers, would be of more value to the profession than all the books that have been written upon it in the ordinary style of general conclusions from experience, mingled perhaps with theoretical speculations.

In receiving the observations of others, it is always to be borne in mind that there is great difference in observers both mentally and morally. Here is a list of cases treated with a certain remedy, and they are cured. Looking at this record alone the inference would be that the grand remedy for the disease has been found. But as the same experience is not realized by

others, the obvious inference must be that there is something wrong in the observation of that physician who made the record. Some, indeed, we are pained to say, make absolutely erroneous statements, as we happen to know in regard to some records that have been paraded on the pages of journals and even transactions of grave medical societies.

There are many other points which we would like to touch upon, did we not fear to exhaust the patience of our readers. The whole subject is one of great interest. It is in truth the grand subject for the consideration of the profession at the present time. And in leaving it we would point out one error into which many may be liable to fall. We fear that some from a natural tendency, others from indolence, and others from a disposition to a routine, may, from being strongly impressed with the danger of doing too much, go to the other extreme, and do too little. While in view of nature's curative agency, it is of paramount importance to know what not to do, it certainly is important to know also *what to do;* and at this latter we shall most assiduously aim if we wish to secure the highest ends of medicine, and be thoroughly faithful to our patients.

One word more in regard to the address of Dr. Holmes, and we are done. The style of it, as an address to a medical society, is not exactly to our taste. We should have liked it better if he had thrown off the air of a popular lecturer, and appeared among his peers with more of the gravity of the physician. But this is comparatively a small matter, for after all the manner of doing a thing is of minor moment compared with the thing itself. And as to the thing in this case, we cannot see so much of heresy in this address as some do, nor the great advantage which it has been said to give to the legions of quackery. Though the author has sometimes caricatured the truth, we may even say sometimes misrepresented it, in his aim at wit and brilliancy, he has committed no such gross error as Forbes did when he said of medicine, "Things have arrived at such a pitch that they cannot be worse—they must mend or end;" and we have no doubt that if *rightly understood* his address will do much more good than harm to the cause of rational medicine.

W. H.

BIBLIOGRAPHICAL NOTICES.

ART. XVIII.—*Transactions of American Medical Societies.*

1. *Transactions of the New Jersey State Medical Society for* 1859, *held at the city of Trenton, January 25th and 26th,* 1859, *being the 93d Annual Meeting of the Society.* 8vo. pp. 95.
2. *Proceedings of the sixty-eighth Annual Convention of the Connecticut Medical Society, held at Hartford, May 23d and 24th,* 1860. 8vo. pp. 74.
3. *Medical Communications of the Massachusetts Medical Society.* Vol. ix. No. vi., 1860. Second series, Vol. v. Part vi. 8vo. pp. 90.
4. *Transactions of the Medical Society of the State of New York, for the year* 1860. 8vo. pp. 280.

1. THE Transactions of the New Jersey State Medical Society, at its 93d annual session, held at Trenton in January, 1859, were opened by an address from the President, Dr. J. P. Coleman.

The subject of the address is the duty of the members of the Society to aid energetically in the promotion of the best interests of the medical profession throughout the State, in despite of the action of the legislature, by which the State Society has been divested of the legal authority it formerly and for a long series of years possessed of withholding from improper and unqualified persons the right to practise medicine in any part of New Jersey, and of exacting from those upon whom the right was conferred obedience to a code of ethics adapted to elevate the standard, promote the harmony, and increase the usefulness of the entire medical profession of the State.

The address is replete with good sound sense, and contains much valuable advice, of which it is hoped the medical men of New Jersey will not fail to profit. Dr. Coleman does not despair of the success and permanency of the State Society as an independent, voluntary association, and is fully persuaded of its adaptedness to achieve a continued career of usefulness.

The first of the reports is that of the Sussex County Medical Society for 1858, drawn up by Dr. Thomas Ryerson, of Newton.

The year 1858 was characterized throughout by a mild, equable, moist condition of the atmosphere, and a comparative freedom from sensible electrical disturbances. It was, likewise, particularly healthy, very much less sickness of every kind having been met with than usual, and what occurred being of a mild character. Many serious cases of croup, and also of rheumatism, occurred, it is true, in the practice of one physician, during the winter and spring, while, in the fall, there were observed two endemics of diphtheritis. In both these, evidence, we are told, was presented showing that the disease is not, as some have supposed, identical with scarlatina; those who had passed through the latter showing an equal liability to the attack of diphtheritis as those who had not. It was evidently, also, a distinct affection from croup, with which a portion of the patients were attacked.

In one of these epidemics of diphtheritis, Dr. R. states that many of the patients who were attacked were affected with an extremely painful fetid ulceration of the toes, which could not be traced to any want of cleanliness. It had no apparent influence upon the fatal termination of the cases in which it occurred. The disease was in every instance particularly destructive to life—of the cases complicated with croup none recovered.

From the expression "complicated with croup," employed by Dr. Ryerson, we presume that he considers diphtheritis and croup as two distinct diseases, even when present in the same patient. This is certainly an error. While we know

that diphtheritis is not necessarily accompanied by symptoms of croup in any part of its course, and that, on the other hand, croup may occur and run its entire course without any diphtheritic deposit being formed upon any portion of the throat except the larynx. So long as the pseudo-membranous formation is confined to the faucial membrane, leaving the larynx free, no symptoms of croup will occur, but the moment, in diphtheritis, the membraniform deposit extends from the fauces into the larynx, croupal symptoms of a more or less intense character will become developed—not because of the occurrence of any *new* disease, but simply from the extension of the local affection of the throat in a direction which causes it to interfere with the freedom of respiration; the croupal symptoms become then as much a part of the diphtheritic affection with which the patient was first attacked as are any other of its phenomena immediately dependent upon the membraniform deposit in the throat.

Dr. R. notices an endemic of enteritic fever, which occurred in Sussex County during the year 1858. In every case, he states, the pathognomonic eruption was present. The termination of the disease was generally favourable. In some of the cases the veratrum viride was administered, but without, apparently, any decided good effect.

The report embraces some general but very sensible remarks upon certain positions of the child's head in reference to the pelvis, of occasional occurrence, in which, when the natural relations of size obtain, unassisted delivery may take place; but, under other circumstances, manual assistance will be required. In these latter cases, Dr. R. is opposed to the employment of opium, under the plea of calming the supposed spasmodic and partial action of the uterus, or of ergot, for the purpose of augmenting its action.

The report closes with some remarks on the surgical practice within the county during the year 1858.

The femoral artery was successfully tied in an adult male, above the adductor tendon, for the cure of a false aneurism occurring in the middle third of the thigh, of three weeks' standing, the result of a puncture made with a butcher's knife.

The succeeding report, from the Medical Society of Essex County, was presented by Dr. Lehlbach.

Essex County, from its population, its commercial and manufacturing relations, is, perhaps, the most important county of New Jersey. It comprises nearly one-eighth of the entire population of the State, while the population of its principal city, Newark, is between sixty and seventy thousand.

From the mortality statistics of Newark, it appears that the only epidemic of any extent which prevailed in 1858 was one of smallpox. The number of deaths from the disease were 68. In 1856–7, the deaths from smallpox were only 10; in 1855–6, no deaths from the disease occurred, and in 1854–5, only two.

The epidemic of 1858 commenced as early as November, 1857, and continued throughout the winter. Isolated cases occurred as late as June and July, 1858. It is estimated that the entire number of cases that occurred during the continuance of the epidemic was at least three hundred.

During 1858, fewer deaths were occasioned by scarlet fever than in either of the three previous years. In 1855, the deaths from scarlatina were 32; in 1856, 52; in 1857, 277; but in 1858, they only amounted to *twenty-two*.

With respect to veratrum viride Dr. Baldwin remarks, that its employment, which has of late become quite extensive, has not always fulfilled the expectations which, from its reputed virtues, had been raised. A decided diminution of pulse is soon observed to follow its administration, and in many cases marked symptoms of congestion, in one or other of the important organs, have also occurred, and the cases have terminated unfavourably. Given in an attack of hæmoptosis, the effects of the remedy were decidedly injurious, and forced its discontinuance. In all cases of passive congestion, or in which there are present no symptoms of active disease, the use of the veratrum viride has usually proved prejudicial.

The same gentleman remarks that he has administered conjointly the hypophosphite of lime and soda in six cases of well-marked phthisis pulmonalis. After a fair trial the remedy was abandoned, no beneficial effect in either of the cases having been observed. In one or two instances the results were decidedly

prejudicial. The use of the articles being followed by severe dyspnœa, a peculiar sense of oppression at the chest, suppressed expectoration, and, in nearly every case, gastric irritation.

It is stated that Dr. Baldwin has treated successfully the cases of erysipelas which have fallen under his care with quinine, combined with small doses of opium and antimony internally, and with tincture of iodine externally.

Dr. Coles, as well as Drs. Dodd and Osborne, speak highly of creasote as a local application in erysipelas. They have found it almost certainly to abate the inflammation, and to arrest its spread. From 4 to 6 drops of creasote are dissolved in an ounce of water, and this solution is used as a wash. Dr. Osborne also speaks highly of the use of quinine in erysipelas.

Epileptoid convulsions of infants and children were treated with good results by the cyanide of zinc and the ordinary antiphlogistic measures.

In a case of wry-neck (spasmodic), electricity was resorted to, and was followed by good effects. A peculiarity was observed in this case. In the morning, on awaking, there was no distortion of the neck; the position of the head being natural. The distortion came on gradually during the day. At the date of the report, the patient was under the use of iron, with a good diet, and the continuance of the electricity.

To the report of Dr. Lehlbach are appended several interesting communications, comprising the history of sundry cases of disease and surgical operations, from different physicians, with an obstetrical report, embracing 100 cases, by Dr. B. L. Dodd.

Many of the cases are of deep interest. Dr. Lehlbach presents an account of two cases of intermittent fever, accompanied with bronze liver. The first was in a girl 15 years of age, residing in an eminently malarious region, surrounded with ponds and marshes. After she had been laboring for two or three months under intermittent fever, for which nothing in the way of treatment had been done, she was attacked, in the evening of October 25th, 1858, with an intense chill, and died before morning. On examination, the pleural cavities were found distended with a perfectly clear, transparent, light coloured serum, amounting to over two quarts. Not the slightest trace of old or recent inflammation of the pleura could be detected. The lungs were healthy. The pericardium contained an abnormal amount of fluid resembling that in the pleura; it presented no marks of inflammation. The heart and large bloodvessels were healthy. In the peritoneal cavity there was a considerable amount of clear, transparent serum, but no other trace of peritoneal inflammation. The liver was slightly enlarged, and somewhat congested. On the upper surface of its large lobe there were several spots of bronze discoloration, well-marked and distinct. The entire surface of the liver was of a darker hue than natural. The spleen was enlarged, and had the appearance which is usually met with in cases of intermittent fever. The other viscera were sound.

The second case occurred in the practice of Dr. Sayre, of New York. The patient, a lad three years of age, had suffered, during 1858, some seven or eight attacks of intermittent fever of longer or shorter duration, and of the irregular or masked type. In September, 1858, he had an attack of dysentery. He died somewhat suddenly on the morning of the 11th of December. A post-mortem examination showed effusion in both pleura, to the extent of about six ounces; no adhesions; lungs healthy; heart somewhat enlarged, showing hypertrophy with dilatation of left ventricle. Liver much enlarged; when cut bled freely; presented light mottled spots resembling fatty degeneration. Its base was bronzed. Spleen enormously enlarged; texture normal; colour very dark. The kidneys to the eye appeared normal. The rectum contained a quantity of black tarry feces, resembling meconium. Solitary glands throughout much enlarged.

Dr. Stephen Wickes, of Orange, describes an epidemic of jaundice produced by malaria. The epidemic made its appearance about the middle of September, and continued until the last of November. The cases were most numerous during October. It was confined to no particular section of the town. The symptoms were those of simple jaundice. Yellowness of the entire surface; nausea; vomiting of acid matter; general lassitude, oppression, and a sense of great weakness

at the præcordia; slight fever, without periodicity; turbid, saffron-coloured urine; clay-coloured stools.

The disease was confined to no particular age or class of the population. It attacked alike the temperate and intemperate, the sedentary and active. It was not very severe in any case, and fatal in none. The duration of the attack was about three weeks. Nearly five per cent. of a population of 8000 were said to have been attacked. It was, for about six weeks, the only disease observed in Orange. The cases were treated by Dr. Wickes mainly with quinine, with fomentations, and other topical remedies to relieve local pain or distress.

From the obstetrical report of Dr. Dodd we extract the following general summary:—

In 73 cases the average length of the umbilical cord was 23.859 inches; the shortest being 13 inches, the longest 42.5.

There were 94 vertex presentations in 99 cases. In six of these the child was born dead. There were two breech-presentations, one a twin. In both the child was born dead. There was one face-presentation. There was one transverse case. There was one case of twins, one child presenting with the breech, the other with the vertex. There were two cases of placenta prævia, with the head presenting in one, the shoulder in the other. In one of these cases the child was dead.

Of 87 head-presentations, 78 were of the left occipito-iliac anterior position; 3 of the right occipito-iliac anterior position; and 6 of the right occipito-iliac posterior position.

In six cases the child was born before the arrival of the accoucheur.

Several valuable surgical histories are appended to the report from Essex County.

The New Jersey Transactions close with an account of the medical topography of Orange, by Dr. Wickes. Various statistical details and a meteorological table for Newark for the year 1858.

2. The Sixty-eighth Annual Convention of the Connecticut Medical Society, held at Hartford, May, 1860, was opened by an address from the president, Dr. Ashbel Woodward, of Franklin, on the subject of medical ethics, in which is forcibly enforced and illustrated the necessity and beneficial influence of the code for the regulation of the intercourse of physicians, as well among themselves as with their patients and the public at large. The members of the medical profession hold a very peculiar relationship to each other, to those who place themselves under their professional care, and to the communities amid which they are placed. Now it must be apparent that a code defining with clearness this relationship and the special duties and obligations thence arising is absolutely necessary to promote the harmony and minister to the legitimate interest of all the parties concerned. It might, we think, be easily shown that a conscientious adherence to the provisions of the ethical code of the profession is far better adapted to promote the dignity, the social standing, and the moral influence of the physician, than we have any right to expect from the operation of legislative enactments or other extrinsic means. But to derive from our ethical code all the good it is competent to effect, it must be adopted as a bond of union between all who are embraced in its provisions; causing each to experience habitually the same earnest solicitude for the honor and general well-being of his professional colleagues as for his own. It must become the means of harmonizing all who are affected by its provisions, by its exposition and inculcation of the grand moral principles which underlie all that is most beautiful, and generous, and ennobling, connected with the life of the physician. Its mission is the prevention of offences and not to promote dissension and weaken confidence by an inquisitorial spirit which creates the suspicion of offence often in cases where no offence existed. It should teach the physician "to exhibit the benignity of his profession in kindness of manner and integrity of conduct, to preserve professional trusts inviolate, to avoid remarks reflecting on brethren or the faculty at large; to shun representations that may induce doubts in the popular mind respecting the efficacy of the healing art; and to keep clear of all participation in the counsels of men whose course is founded in secrecy or deceit. * * * The walk of the physician should be pure and truthful, marked by an earnest zeal to

discharge every duty well, that when summoned from his stewardship he may appear with a clear conscience before the bar of God. He should cultivate assiduously both the intellect and the heart. Then, in devoting all his best faculties to the relief and melioration of mankind, he will at the same time most effectually 'magnify the office' of his choice."

The first of the professional papers in the Connecticut Transactions is a dissertation on hygiene, by Dr. A. B. Hale, of Norwich.

One of the noblest offices of the physician is unquestionably the prevention of disease, the preservation of the health, and vigour, and usefulness of the human organism, and their prolongation to the latest possible period. That, in many instances, we have it in our power to remove the predisposition to abnormal action, and the more prominent of the causes by which actual disease may be developed in the different organs of the body, is most certain. It has been shown, by a series of well-devised and cautiously conducted observations, in conjunction with close statistical investigations based upon a correct system of registration of births, marriages, and deaths, that the morbific agencies productive of the impaired health and excessive mortality prevalent in certain communities, may be detected, and, by the adoption of appropriate corrective measures, effectually controlled. Even those diseases, the predisposition to which, or the germs from whence they spring are inherited, it has been shown, may be warded off for a very long period, and, after they have become developed, their destructive tendency arrested, and the amount of suffering induced by them reduced by due attention to a correct hygienic course of treatment, and in this manner by gradually improving the constitutions of the children generation after generation, the hereditary taint or tendency may itself be finally eradicated.

The dissertation of Dr. Hale presents a very good outline of the general bearings of the principles of hygiene, so far, at least, as concerns the influence exercised upon the health, life, and well-being of man by the air he breathes, and by the proper exercise and repose of his physical, mental, social, and moral attributes.

From the sanitary report for Hartford, by Dr. L. S. Wilcox, we select the following interesting items.

The annexed table exhibits the deaths of children under 5 years of age that have occurred, during a series of years, from 1855 to 1859, both inclusive, throughout the entire county of Hartford, in the city alone, and in the country towns alone, with the percentage such deaths, in each of these precincts, bears to all the deaths from known causes, that had taken place during the same period.

	Deaths from known causes.			Deaths under five years.			Percentages.		
Years.	County.	City.	Country.	County.	City.	Country.	County.	City.	Country.
1855.	951	263	688	348	101	247	36.6	38.04	35.9
1856.	1062	300	762	455	151	304	42.84	50.33	39.89
1857.	1188	397	791	491	173	318	41.33	43.58	40.2
1858.	1269	369	900	517	168	349	48.62	45.47	38.78
1859.	1212	399	813	458	199	259	37.79	49.87	31.86
Average percentages for the five years . . .							41.43	45.46	37.33

It will be seen by this comparison, that the number of deaths of children at five years and under in the city of Hartford, is more than 8 per cent. larger than in the country, while the percentage for the whole county rises to the high figure of 41.43.

The following exhibit of the ratio of deaths in males to those of females during some of the decennial periods of life for five years—1855–59—is interesting in many points of view.

In those from 20 to 30 years of age, the deaths were of males, 317, of females 422; from 30 to 40, males 256, females 253; from 40 to 50, males 222, females 178; from 50 to 60, males 175, females 196; from 60 to 70, males 241, females 204; from 90 to 100, males 26, females 31.

It will thus be seen that woman's viability, between *twenty* and *thirty*, is much lower than man's. At this period she enters upon maternity, and for maternity, with instinctive heroism, she jeopards life. The two sexes tread the

next decennial period with nearly equal pace; after which man receives his burdens—grave responsibilities, wearisome anxieties, and inexorable ambition. Woman, on the other hand, rests from maternity, and gathers strength for future struggle; her viability rises while that of man diminishes. At *sixty* the struggle is over; the burden of sex is thrown off by woman; her life henceforth though passionless is not joyless—health and strength beam mildly forth from a nature purified and serene; while at *sixty* man, too oft bereft, disappointed, and worn down, hastens his steps, and when the weary goal of *ninety* years is reached, weak woman oft bears her weaker companion to the grave, and still lives to plant the myrtle there.

Dr. Wilcox presents a comparison between the deaths from consumption in the city of Hartford, and in the county. He believes that such a comparison is just, inasmuch as, in all appreciable respects, Hartford and the country towns are similarly circumstanced in respect to climate and soil.

The percentage of deaths from consumption in 1855 was, for the city 17; for the country 20.8; in 1856, city 19, country 20.1; in 1857, city 9.8, country 18.46; in 1858, city 12.46, country 19.9; in 1859, city 10.27, country 18.08; average percentage for the five years, city 13.77, country 19.47.

From these data it appears that the whole number of deaths from consumption during the five years preceding 1860, was nearly *six per cent.* larger in the country than in the city. To show that this large difference in favour of the city cannot be accounted for from the fact that the proportionate number of deaths in children is so much greater in the city than the country, Dr. W. presents the percentage of deaths from consumption to all deaths from known causes, in persons over *ten* years of age, during the five years to the end of 1859—which were, for the city 27.6, for the country 33.13. The difference in favour of the city is thus scarcely diminished, still standing at nearly *six per cent.* The percentages of deaths from consumption to the entire population is also in favour of the city. They stand at 3.31 for the country, at 1.82 for the city.

To the volume of the Connecticut proceedings are appended biographical notices of several of the deceased members of the State Medical Society.

3. All that have reached us of the "Medical Communications," made to the Massachusetts Medical Society, at its Session of May 30, of the present year, is that portion which contains the minutes of the session, some biographical notices, and the annual address of Dr. Oliver Wendell Holmes. This last has received a special notice in our Review Department.

4. The Transactions of the Medical Society of the State of New York for the year 1860, commence with an inaugural address by the President, Dr. B. Fordyce Barker, of New York City. The address is of a strictly business character. It embraces some judicious suggestions in relation to the duties of the State Society to the medical profession and to the public. Reference is made to its published transactions—the interesting and valuable character of the contributions embraced in them, and their appropriateness, in consequence of their extended circulation, as a medium for the communication of the results of the observations and investigations of the physicians of the State. Attention is also called to the important measures connected with the well-being of the profession, and calculated to augment its usefulness and efficiency, that have been suggested and carried into successful operation by the Society. Among these are especially particularized the origination of the convention for the preparation and decennial revision of a National Pharmacopœia and the organization of the convention which eventuated in the permanent establishment of the American Medical Association.

A well-deserved eulogy is bestowed by Dr. Barker on the United States Pharmacopœia and the admirable commentary upon it, the Dispensatory of Drs. Bache and Wood. The last-named work being, perhaps, more universally consulted and appreciated by the physicians and pharmaceutists of this country than any other of the more familiar of our professional works.

A somewhat extended paper comprising "Notes upon New Remedies," fol-

lows the address of the president. It was prepared for and read by Dr. Ed. R. Squib originally before the Medical Society of King's County. The remedies noticed are, *Chromic acid*, as a useful escharotic—*Sulphurous acid*, as a remedy in certain affections of the skin—*Fused nitrate of silver*, containing a portion of chloride, by which the strength of the sticks are increased, and their solubility diminished—*Subcarbonate of bismuth*, as a substitute for the subnitrate in all the cases in which the latter has been found useful—*The sulphate of iron and ammonia*, which, while similar in its therapeutic properties to the sesquichloride, is less stimulating in its action, more efficacious as an astringent tonic, and less liable to produce nausea or headache—*Solution of perchloride of iron*, as a hæmostatic, for the injection of aneurismal sacs, and, internally, in cases of erysipelas, anasarca, scarlatina—*Solution of persulphate of iron*, chiefly as a hæmostatic—*Pyrophosphate of iron*, as an agreeable non-stimulant tonic—*Syrup of pyrophosphate of iron*, similar in its therapeutic properties to the last—*Compound liquor of opium*—*Permanganate of iron*, as an escharotic, disinfectant, and deodorizant—*Chlorate of soda*, as a substitute for chlorate of potassa. The cursory remarks offered by Dr. Squibb in respect to the preparation, composition, and remedial virtues of the articles just named will be found both interesting and instructive.

The paper closes with some very pertinent remarks on dragées, granules, sugar-coated pills, fluid extracts, etc., forms of remedial substances which are now imported or manufactured extensively as special articles of trade; and often, it is to be feared, their preparation being intrusted to incompetent, careless, and irresponsible persons, little confidence can be placed either in the genuineness and purity of the active substances of which they are said to be composed, or in the exactitude of the proportions of these which they respectively contain. Dr. Squibb suggests the propriety of the physician directing the forms of medicine just referred to, should he feel inclined to prescribe them, to be procured only of such pharmaceutists as prepare themselves these and all other medicinal articles, the genuineness and activity of which cannot be determined by reliable tests.

The next article is the report of the Committee on New York City Milk, by Dr. S. R. Percy, communicated to the State Society by the New York Academy of Medicine. Of this very able and highly interesting report we shall be able to present only the general results at which the committee have arrived, after, apparently, a very full, candid, and cautious investigation of the subject.

"1st. The housing of milch cows in great numbers within the narrow space allotted to them in the distillery stables of New York, Brooklyn, and Williamsburg, is of itself sufficient to vitiate their health, and render their milk unwholesome. But in the actual condition of the stables, these deleterious effects are materially augmented by want of cleanliness, insufficient light, and a vitiated atmosphere, not to speak of the restraint and want of exercise to which the cows are subjected, nor of the unwholesome food supplied to them.

"2d. Many of the animals confined in these stables were found in a sickly condition, and on careful inquiry at one of the largest of these stables, we ascertained that the annual mortality among the cows confined there was not less than ten per cent.

"3d. Such of the cows at these establishments as remain comparatively healthy, are retained without once leaving the stable, as long as they continue to yield a sufficiency of milk, usually for about a year, after which they are fattened for the market, slaughtered, and sold as beef. The beef produced from these animals is unsavory, and easily recognized by its offensive odour, and this odour is not dissipated even by the process of cooking. The fibre of this beef is flaccid, and its cellular tissue is found infiltrated with watery fluids instead of solid fat. Hence, in the process of cooking it shrivels, and presents other appearances by which the practised eye can readily distinguish it from the beef of healthy grass-fed cattle.

"4th. The swill, which constituted the principal food of the cows at these stables, and which is but the refuse material left after the process of distillation, is, even at the period of its withdrawal from the alembic, and long before it is distributed to the feeding troughs, found to be highly charged with acetic acid.

Its acidulous quality, intermixed with a sort of saccharine and farinaceous flavour, is not very disagreeable to the taste, but, taken into the stomach, the swill operates briskly as a purgative, disturbing the bowels, and augmenting the urinary secretions. These effects were sensibly experienced from the use of it by two of the members of the committee, and from the continual purging of the cattle, and the excessive amount of urinary secretion, we are led to the belief that its effect upon the cows is not materially different from its effect upon the human system.

"5th. The milk of these cows does not exhibit the characteristics of wholesome milk. It presents almost invariably an acid reaction, whilst the milk from healthy grass-fed cows is, when first drawn, always alkaline. The acid quality of this distillery milk, it is true, is not perceptible to the taste while the milk is fresh, but it is always recognizable by chemical tests. And this feature is of itself sufficient to condemn the milk in question as an article of food, especially for young children. This remark applies to the milk procured from such of the cows in those stables as appear to be in good health. It must apply with still greater force against the milk procured from such of them as are actually diseased. And it is ascertained that the milk from the diseased cows is mixed with that from the others, and distributed to consumers.

"6th. The cases collected under the direction of the committee, by Dr. Percy, demonstrate the fact, independent of any chemical examination, or any *à priori* reasoning, that the milk procured from these swill-fed animals is injurious to those who use it. The difficulty of authenticating cases of this sort, and of establishing the relation of cause and effect between the milk and the diseases which are attributed to the use of it, will be sufficiently understood by every medical observer, and but for the unwillingness of the committee to adduce any cases in which this connection could not be clearly established, numerous similar instances would have been added to those which Dr. Percy has reported. One instance, within the knowledge of the committee, serves to show that the housing of cows in private stables, even where these cows are fed on wholesome food, and kept carefully under the eye of those who use the milk in their own families, so long as the cows are restricted to the stable, and deprived of their appropriate exercise in the open air, deteriorates the quality of the milk to such a degree that it cannot in all cases be used with safety as food for young children."

From all the facts collected by them, the committee consider that it is rendered evident that the traffic in the milk of swill-fed cows is one which is detrimental to the health of the community, and should, therefore, be discontinued.

A paper on hypodermic medication, by Dr. James M. Sturdevant, is the next in order. The plan of medication advocated by Dr. S. is by the injection of medical substances in solution through a perforated needle introduced beneath the integuments in the immediate vicinity of any local disease upon which they are intended to act. It is chiefly useful in cases of intense neuralgia of the more superficial nerves.

A long contribution is presented by Dr. B. Lee, of New York, on the general pathology of the skin and its treatment by warmth and moisture. Dr. L. lays no claim to originality in the remarks presented by him. His sole object throughout the contribution being to enforce, by an appeal to the recorded observations of acknowledged masters in the science, the very serious objections to which the ordinary practice of applying to the skin in cases of injury and disease, poultices, ointments, and medicated cataplasms, and the vast superiority over these, which are often offensive, and sometimes positively injurious, of the simple water dressing, in cases not only of clean incisions, but in those, also, of lacerations, burns, ulcers, and inflammation. The entire communication is marked by correct principles and judicious practical precepts ably enforced.

The ensuing paper is by Dr. Daniel Holmes, of Canton, Pa. It is the history of a case of fracture of the neck of the femur within the capsule, which eventuated in bony union within fourteen weeks and three days. After a careful perusal of the history of the case, as detailed by Dr. H., with a close examination of the post-mortem specimen of the fractured neck of the bone, which was exhibited by the Doctor at the session of the Pennsylvania Medical Society of the present

year, we are convinced of the entire correctness of the resolution presented by Dr. March, and adopted by the New York State Medical Society, which affirms that the history and specimen afford satisfactory evidence of the existence of a complete fracture, not impacted, perfectly within the capsular ligament, which had become so firmly united as not to admit of separation without the use of great violence.

The object of the following paper, on extirpation of the eye, by Dr. John Ball, of Brooklyn, is chiefly to recommend a species of forceps for seizing and holding the ball of the eye during the operation of extirpation. The blades of the instrument are curved to suit the form of the globe of the eye, to which they can be attached, and afterwards detached from it by means of a slide. The points of the curved blades are formed into sharp hooks, which are sufficiently prominent to penetrate the coats of the eye, but not long enough to pass through them, consequently preventing the escape of the humours, as occurs when the ligature is employed, and enabling the specimen to be preserved, if desirable, for pathological illustration.

A case of non-malignant exophthalmia, occurring in a coloured female 27 years old, is presented by Dr. T. H. Squire, of Elmira. After the sight of one eye had been destroyed, and that of the other greatly impaired, by a rupture of the coats, a general improvement took place in the health of the patient, and a recuperative process commenced in the protruded eyeballs, which, Dr. S. thinks, may, perhaps, in the end, restore them to something like their original form and position.

The cases of gunshot wounds, related by Drs. S. D. Willard and N. C. Husted, in the ninth and tenth communications, and the brief notice of two cases of tumours, one of the breast, and the other of the uterus, by Dr. H. Corliss, in the eleventh communication, are full of interest.

The twelfth communication is the history of a case of direct inguinal hernia of the right side, by Dr. Charles Barrows. It occurred in a farmer, 65 years of age, after severe labour in the hayfield. An operation at the proper period being positively rejected by the patient, gangrene set in, and on the eighth day the hernial tumour sloughed, giving discharge, by the abnormal opening thus formed, of a fetid greenish fluid, with a small quantity of hardened feces. Under a very simple treatment, the artificial anus in the groin became completely closed by the end of about the fifth week after the occurrence of the sloughing.

The case in all its aspects is a curious one—a direct inguinal hernia is confessedly of very rare occurrence. The most instructive feature in the case is, however, its successful termination under the most unfavourable circumstances, and with but little aid, medical or chirurgical.

A case of quadruple birth is detailed by Dr. A. Goodman, and two interesting cases of extra-uterine pregnancy, by Dr. John Swinburne, of Albany. Both of the latter cases were ovarian; in neither was there a fully developed fœtus discovered after death.

The sixteenth communication is the history of a case of facial paralysis in a lad fourteen years of age, related by Dr. F. Evarts, of Oswego. The paralysis was, probably, dependent upon the irritation caused by the evolution of the second molar tooth of the upper jaw; it disappeared after the free lancing of the gums, the use of mild cathartics to keep the bowels soluble; frictions to the face with equal parts of soap liniment and tincture of capsicum, and the application of galvanism.

The next communication is the history of a case of supposed recurrence of measles, by Dr. Nelson Nivison. The patient was a female, thirteen years old. In March, 1858, she passed, it is stated, through a very favourable attack of measles. In place, however, of recovering her normal state of health, she continued to be affected with symptoms of severe bronchitis, a harassing cough, and copious expectoration. At the end of two months there was considerable emaciation, with night-sweats, hectic fever, and purulent expectoration. In the latter there were occasionally present portions of miliary tubercle. These unfavourable symptoms steadily increased until near the end of the third month, when nearly all hope of a return of health was abandoned. At this period, however, a marked change suddenly occurred. All the usual prodromeia of measles

now again presented themselves, and the morbillous eruption was confidently predicted. On the third day it began to appear on the face, and soon afterwards over nearly the entire body. The disease pursued its usual course. After remaining for three or four days the eruption disappeared in the ordinary way. From this time on the pulmonary symptoms began to subside, and the health of the patient was gradually restored. Six months from the original attack there remained only a troublesome eczema, and certain strumous symptoms, which had not entirely disappeared by the 1st of January, 1860. But from the rapid improvement of the patient her entire restoration to health is confidently anticipated.

This case is a most singular one, and altogether strictly unique. Not because there took place in it a second attack of measles, for many of such are on record; but from the character and intensity of the symptoms which continued after the disappearance of the measles on its first occurrence, and their immediate subsidence upon the appearance of a second attack of measles after an interval of several months. The question very naturally suggests itself, was the case, in fact, an example of two separate and independent attacks of measles, or only of a recession and recurrence of the original disease.

The supervention of the pulmonary symptoms immediately after the disappearance of the first eruption, and their subsidence simultaneously with the second, would seem to favour the latter hypothesis. In further support of which it may also be stated that the patient was not known to have been exposed to the contagion of measles previous the second attack. On the other hand, the fact may be adduced that the two attacks were ushered in by all the usual prodrometa. In both the eruption remained on the surface the usual time, and disappeared gradually with the characteristic desquamation. In cases of retrocession of measles alarming symptoms almost immediately ensue, whereas, in the case before us, the most serious symptoms came on slowly and insidiously, and did not attain the maximum of intensity till some months after the disappearance of the eruption of the first attack. That the two attacks in this case were both of genuine measles was proved, Dr. N. thinks, by the pathognomonic symptoms being well marked in both, and from the fact that measles, on both occasions, were communicated by the patient to other children.

The two following communications, one from the Medical Society of King's County, and the other from that of Queen's County, have only a local interest.

The twentieth communication is a condensed statement of what has been attempted for the advancement of medical education by the medical conventions of 1846 and '47, and by the American Medical Association, since its organization in 1847, prepared by Dr. Thomas W. Blatchford. Interesting as is the bird's-eye view it presents of the action of our professional congress on a subject which concerns all who have at heart the true dignity and interests of the medical profession, we can but refer to the communication, it being one, as all will perceive, which does not admit of analysis.

The succeeding communication is the report of a committee on the subject of "a second degree in medicine. In this report the real question at issue would seem to us to have been entirely evaded. Is a degree preliminary to that of 'Doctor in Medicine advisable; will it aid the cause of medical education and insure the competency of the actual' Doctors?" Such were the inquiries which called for the attention of the committee; to neither of them, however, do they appear to have given any consideration. We confess that we are no advocates for two degrees in medicine. With an ample scheme of medical education, uniform throughout the United States, and faithfully carried out in practice, and the subjection of every candidate for graduation to such an examination as would fully test his competency to enter upon the practice of medicine in all its branches, we cannot see any harm that could possibly result from his being admitted at once to the doctorate. If he be required to take, first, an inferior degree, and to wait a certain period previously to his receiving the diploma of doctor, whether this be conferred upon a second examination as to competency, or as a matter of right, even could such a system be carried out in practice, it would be liable to very serious abuses which would more than neutralize any of the supposed benefits anticipated from it.

The twenty-second communication is the report of a committee on the establishment, by a legislative act, of a State commissioner of lunacy. In view of the many difficulties and abuses attendant on the present plan by which the state of mind of an individual may be established in the several circumstances in which it can become necessary to determine with certainty his sanity or insanity, it is proposed by the committee that an act should be passed by the legislature of New York providing for the appointment of a competent commissioner, whose duty shall be personally to examine into the actual condition of the mind in persons accused of insanity, with a view to their proper treatment, and to the appointment of legal trustees for the management of their estates, or in those on whose behalf the plea of insanity is set up with the view of evading the punishment of any criminal act of which they stand indicted or have been convicted. The subject is one of immense importance in all its bearings. The plan suggested in the report before us—of intrusting the grave and often very difficult question of the sanity or insanity of a citizen to the decision of a single commissioner—however competent, is liable to very grave objections. We do not, indeed, perceive that it has anything to recommend it over the plan of allowing one of the superior courts or some equally safe and reliable authority to appoint in each case where the sanity of mind of an individual is questioned, a commission composed of three or more physicians known to be in all respects competent to decide between the sane and insane; sufficient time and opportunity being allowed to enable them to arrive at an accurate verdict.

The report of the committee on medical and surgical statistics follows next in order. It speaks favourably of the results of the system of voluntary registration adopted by the New York State Society. Although yet in its infancy, and encumbered with many apparent difficulties, it is believed to have already accomplished much more than could have been reasonably anticipated by its original projectors. "Not only has the attention of the profession been aroused to the great value of reliable registrations of disease, but a vast collection of valuable facts has been secured, from every portion of the Empire State, exhibiting, when duly arranged, the most accurate data in the possession of our profession, for estimating and comparing the causes of death, the prevalence of epidemics or of disease of any form, the relative mortality of synonymous diseases in different sections of the State, and the influence of occupation, civil condition, age, colour, season, sex, &c., in the production and modification of disease. It also exhibits reliable statistics of surgical and obstetrical practice."

From what has been already accomplished the committee feel encouraged in their efforts to place the system of voluntary registration on a permanent basis, and to render it still more useful and universally adopted by the profession. The whole of the statistics collected by the committee it is proposed to present, properly arranged and collated, in 1863, when the term of service of the present committee expires.

In the ensuing two communications, 24 and 25, a subject is discussed of no little importance to the practitioner and his patients—the value, purity, and reliability of the solid and fluid extracts—active principles, and sugar-coated pills, kept for sale as standard pharmaceutic preparations by nearly all, if not all, of our druggists and apothecaries. The first of these communications is a report of a committee of the New York State Medical Society, and the second a report from Dr. Samuel R. Percy, of New York City. Both deserve the attentive consideration of every member of the profession. They appear to have been drawn up with great caution and the utmost candour, after a careful consideration of the subjects discussed, and are replete with valuable suggestions in respect to a class of pharmaceutical preparations that some would fain attempt to make supersede all others.

According to Dr. Percy, the objections to the fluid extracts, and extracts of all descriptions, are, that they are not, and cannot be, uniform in their strength, because the plants from which they are derived possess different amounts of therapeutic properties; because they are liable, equally with the plant itself, to destructive alterations; because each new parcel or preparation must be tested separately before its remedial value can be known; "in short, because *they possess no positive value.*"

The directions for the use of the extracts, emanating from certain laboratories, printed upon the labels or envelops, are referred to as of an especially objectionable character. The most objectionable is the label which accompanies the fluid extract of the root of the cotton plant. Its language amounts pretty much to an invitation to make use of it as an abortant—it being recommended as one certain in its effects, and which may be taken without any risk of injury to the general health.

A report follows on the propriety of memorializing the legislature of New York for the enactment of more stringent measures for the suppression of the crime of abortion, in obedience to a request from the American Medical Association.

After a brief abstract of the mortality of Brooklyn, by Dr. Charles S. Goodrich, showing that the ratio of deaths to population was there as *one* to 53, the Transactions of 1860 close with biographical notices of the recently deceased members of the Society. D. F. C.

ART. XIX.—*Reports of American Institutions for the Insane.*

1. *Of the McLean Asylum, for the year* 185
2. *Of the Retreat at Hartford, Conn., for the fiscal year* 1859–60.
3. *Of the Pennsylvania Hospital, for the year* 1859.
4. *Of the Friends' Asylum, Philadelphia, for the fiscal year* 1859–60.
5. *Of the Mount Hope Institution, for the year* 1859.
6. *Of the Central Ohio Asylum, for the fiscal year* 1858–9.
7. *Of the Southern Ohio Asylum, for the fiscal year* 1858–9.

1. AMONG the oldest and most successful of our institutions for the cure of the insane and the treatment of their malady is the *McLean Asylum*. Though established in the comparative infancy of that enterprise for meliorating the condition of the insane which has now grown to such manly proportions, it has been enabled, by abundant pecuniary means, and by fortunate selections of able men for its executive officers, to keep pace with the progress of improvement; and, despite those original architectural defects which could not be wholly remedied by subsequent action, it now stands among the best conducted and most comfortable hospitals of its kind in the United States.

	Men.	Women.	Total.
Patients in hospital, January 1, 1859 . .	87	99	186
Admitted in course of the year . . .	73	58	131
Whole number	160	157	317
Discharged, including deaths	75	67	142
Remaining, December 31, 1859 . . .	85	90	175
Of those discharged, there were cured . .	33	28	61
Died	14	14	28

Causes of death.—Chronic insanity, 15; typhomania, 3; *paralysie générale*, 3; epilepsy, 4; apoplexy, dysentery, and chronic diarrhœa, 1 each.

As it has not been the practice, at this institution, to enter into so minute an account of the means for moral treatment as at some other establishments, we extract, in full, what the report before us says upon the subject:—

"We are enabled to furnish our family with a great variety of amusements and an abundance of healthful recreation. Billiard-tables, of which we have four, and the two bowling-alleys, are much used, especially by the gentlemen. Two saddle ponies, which have been purchased within the year, are daily used within the grounds by the ladies. They are not only great pets, but are a valuable means of promoting health, and are gentle, and easily managed by the many who ride them. We have an abundance of carriage-horses, and the various beautiful drives in the vicinity are made familiar by their daily use. During the sleighing season extra exertion is made for all to enjoy it frequently. Large sleighs, drawn by four and six horses, have taken parties of forty or fifty through

the adjoining towns, returning them safely and with excellent appetites for a nice dinner or supper prepared for the occasion. Within doors, chess, cards, backgammon, and bagatelle are played and highly enjoyed. Large additions have been made to the library, and books are as ever in constant use and great demand. Much sewing, of all descriptions, is accomplished by the ladies. Almost every apartment has daily a company busily at work, while one may be reading aloud, and the amount of neatly-finished embroidery, netting, knitting, and crocheting, is a proof of their skilful industry and good taste. Music brings to the insane especial comfort and benefit, and we have abundant facilities for its cultivation and enjoyment. The parlors, the principal wards of the ladies' wing, and many of the patients' rooms are furnished each with a piano-forte. We always have accomplished players, and often good singers enough to afford a pleasant musical entertainment. Those who are well enough and whose tastes thus incline them, frequently go to concerts and lectures in the city, and a large number attend public worship every Sunday, at the various churches in the vicinity. Each Sunday evening a sermon is read in one of the wings, which all who choose can hear, and afterwards an hour is spent in singing familiar sacred tunes, in which many voices heartily join. On Christmas, New Years, the Twenty-Second of February, the Fourth of July, and other holidays, parties have been given. These have been largely attended. Music, dancing, cards, stereoscopic views, engravings, conversation, and sometimes ventriloquism, have caused the evenings to pass very pleasantly to both guests and hosts."

In former notices of reports we have presented, wholly or in part, the remarks of several of the superintendents of hospitals upon the education of the young in its relation to mental alienation. As the subject, in our estimation, is second to none connected with the etiology of the malady, we do not hesitate to present to our readers the views of Dr. Tyler:—

"The education of a child commences with the development of its capacity to exercise its will; and every hour of every day thereafter, until the time is reached when a person is assumed to be capable of self-government, calls for an enlightened supervision on the part of the parent and teacher, of the development of every mental and moral faculty. Sufficient and proper aliment should be provided for the intellect, and it must not be overtasked; the tastes should be carefully cultivated; the sentiments rightly directed; and the passions rigidly but kindly schooled. A ready obedience to law and right should, from the first, be inculcated, and the great lesson of self-control be constantly and continually taught. One of the earliest and latest precepts to be impressed is, that a person is and always must be a learner—a respecter of facts; and from careful and truthful observation, remembrance, and comparison of facts, he is to acquire both mental discipline and useful knowledge. An opposite to such a course is too common, and is the result of carelessness of consequences, or of that mistaken affection which practically regards indulgence as the chief good. The child rules the household; every wish is gratified, every whim humoured, and no inclination is thwarted. Every smart thing said and done is applauded, and recounted to others, and the child grows up conceited, passionate, and wilful, with no conception of any object in life other than self-gratification. His intellect is at the mercy of his inclinations; and the chances that such a distorted and uneven growth will be safely and satisfactorily cultivated and disciplined in after years by the amenities and severities of its experience, and escape serious mental disease, are exceedingly small; as small as that a person who gratifies every caprice of appetite for food or drink, at all times and places, will escape an indigestion.

"The object to be aimed at in education is the symmetrical development of the mental, moral, and physical powers. If any of these are cultivated at the expense and to the neglect of the rest, deformity is the result, which if it does not amount to technical insanity, affords a certain ill-balance to annoy or amuse a neighbourhood or a nation. If the intellectual faculties alone are cultivated, though it be in the most patient, philosophical, and thorough manner, and the ultimatum in every department of physical and metaphysical science and knowledge be reached, still the person, from not recognizing his real relations to his fellows, will be found devoid of sympathy and benevolence; cold, selfish, and in-

human; and, born with a brain which was made not only to think, but to feel—to feel an interest in his fellow-creatures, and love and reverence for his God—is it likely that under so partial a use, the whole organ, which is so thoroughly sympathetic in all its parts, will long remain healthy? and this entirely aside from any danger incurred from its unremitting and energetic use.

"If the moral powers alone, or chiefly, are exercised; if the emotions and passions are chiefly cherished and stimulated, and followed to the neglect of the guidance of the judgment, it is plain to see that all sorts of extravagances may be committed in things both good and bad—grave and gay; every fanaticism in religion and philanthropy, every foolery of fancy and fun, every excess of pleasure and passion, and every absurdity of sorrow and fear. By the violence and license of action, the emotions become uncontrollable, and the person is insane; or the intellect, especially if undisciplined, sympathizes and suffers.

"Again, if the physical powers alone are cared for, nourished, and cultivated, the person approximates more or less to a mental and moral dwarf—a creature of instincts and appetite—a human brute."

2. In the report for the fiscal year 1859-60 of the *Retreat for the Insane*, at Hartford, Conn., the statistics under those heads from which we are accustomed to quote are as follows:—

	Men.	Women.	Total.
Patients in the Retreat, April 1, 1859 . .	105	110	215
Admitted in course of the year . . .	80	88	168
Whole number	185	198	383
Discharged, including deaths	76	80	156
Remaining, March 31, 1860	109	118	227
Of those discharged, there were cured . .	34	36	70
Died	9	11	20

Causes of death.—"Six were from exhaustion or general debility; two from exhaustion from acute mania; two from consumption; two from apoplexy; three from dysentery; and one each from disease of the digestive organs, disease of the lungs, pneumonia, hemiplegia, and general paralysis."

The following report of cases in reference to sex will be found interesting:—

"Since 1843, the whole number of patients admitted is 2,328, of whom 1,047 were males, and 1,281 were females. Of the 1,047 males, 396 or 37.8 per cent. have been discharged recovered. Of the 1,281 females, 615, or 48 per cent., have been discharged recovered. It is evident that our female patients are admitted at an earlier and more curable stage than our males. One reason of this may be that the domestic organization, or "home," is more thoroughly broken up by the insanity of the wife and mother, than by that of the husband and father. In the latter case, it may go on with comparatively little disturbance; in the former, the essential element fails and dependence must be had upon external aid, and, consequently, the greater necessity exists for a prompt removal to an asylum. Although generally more difficult to control, they are, I think, more curable than the other sex; their home attachments are stronger, they realize more fully the importance of their services in the circle of home duties, and naturally, therefore, respond more readily to our efforts to induce a more perfect self-control as the first step towards recovery. They are also more impressible, they more keenly and readily appreciate the genial and soothing influences of those means of moral treatment to which I have so frequently alluded, and upon which I so greatly depend. Thus they are more easily led to acquiesce in my views, and, ultimately, to coöperate with me in that general course of treatment which is best adapted to attain the longed-for result. The use of the needle, and the larger number of domestic female employments, gives them also a great variety at least of passing occupation.

"All this is an illustration of the greater importance and efficiency of woman in her especial element, that sphere of boundless influence—home. It is there that she will find the place of the fullest development of her moral and intellectual influence, for it is pre-eminently, and rightfully, a starting-point of all social elevation. That is one of the errors of the times, most pregnant of evil, which

shortens the period of her domestic and educational training, disregards her physical development, and ranks the external accomplishments of person, manner, and dress, above the expansion of the intellect, the refinement of the taste, the elevation of the sentiment, and the most important of all to human happiness, the cultivation of the heart, thus sending her forth into society, to play her high part on the stage of life, with hardly a qualification to meet the responsible duties of wife and mother. * * * * Over three thousand cases of insanity have now come under my direct care and observation. In a large proportion of those cases whose history I could obtain, I have found that the remote and predisposing causes of insanity could be plainly traced to the malign influences of childhood. These influences I cannot at this time enumerate or consider, but their knowledge justifies the assertion that when the duty of making home wise and happy shall be better realized, we shall have in our land less of vice and crime, and much less of insanity."

In allusion to a portion of a former report, in which those laborious duties and wearing cares of the wives of farmers and mechanics, the exhausting influence of which often gives origin to insanity, Dr. Butler relates the following anecdote:—

"One of our worthy female patients remarked one day to a lady, 'Only think of it! Dr. Butler is keeping me here, and I have six children and fourteen cows to take care of at home.' 'Twenty excellent reasons for your remaining here till you are cured,' was the timely answer. They were the twenty reasons which had made her insane."

One of the greatest needs of the Retreat has been supplied, in the course of the past year, by the construction of an "amusement hall," 61 feet in length, by 21 in breadth. The report contains a programme of "the order of exercises" in this hall on the evening of the 13th of March last. It consists of music, recitations, both original and selected, and, at the close, a farce. "During the performances," says Dr. Butler, "the hall was crowded with patients and a few visitors from the city. The most perfect order, of course, prevailed, as usual. During the performance of the amusing farce—'Box and Cox,' the principal actors in which were two of our convalescent gentlemen, I had taken my seat near several of our most inveterate cases of melancholia, to whom smiles, not to say laughter, had long been strangers. They gradually yielded to the genial influences of the amusing scene, and joined right heartily in the laughter which the capital performances drew from us all. They have been better ever since."

From the subsequent remarks upon moral treatment, we make one extract which may haply enable persons who have never visited a modern hospital for the insane, to form a more accurate opinion of a large portion of the persons who are treated in such hospitals, than they may have derived from popular opinions or traditional notions.

"The longer my experience, the stronger my confidence in the power of some articles of the Materia Medica over diseases of the mind. But those moral means are so pleasant in the using! they so soothe the heart, weary with long waiting for health and home, and for a time, at least, they banish from the mind those delusions which 'make the worse appear the better reason.' Amid these weary hours and sad or fearful imaginings, music, games, all social or intellectual gatherings and recreations, art in its various forms of beauty, pictures, engravings, statuary, &c., and (above all other things) flowers—these are the best of medicines, the most blessed of remedial means. If any one doubts this, let them bring me a picture or a bouquet of flowers and I will find him scores of witnesses that this is not word-painting, and that I have not in the slightest degree exaggerated the truth. I have not had for the year such grateful thanks for any one act of professional service, or personal kindness, as for the gift, the other day, to a poor nervous invalid, of a few early violets."

3. The account of the *Pennsylvania Hospital for the Insane*, which was published in the issue of this Journal for April last, relieving us as it does of the duty of giving a more brief and far more imperfect description of the new department for females, will obviate the necessity of occupying much space with a notice of Dr. Kirkbride's last report.

	Men.	Women.	Total.
Patients in the Hospital, January 1, 1859 .	115	115	230
Admitted in course of the year	94	77	171
Whole number	209	192	401
Discharged, including deaths	77	70	147
Remaining December 31, 1859 . . .	132	122	254
Of those discharged, there were cured . .			94
Died	10	4	14

Causes of death.—Acute mania, 3; "exhaustion induced by chronic mania and enfeebled digestion," 2; softening of the brain, 2; tubercular consumption, 2; chronic diarrhœa, 2; chronic dysentery, 1; strangulated hernia, 1.

"The fourteenth annual course of lectures and evening entertainments continued during the usual period of nine months, on not less than three evenings of each week, making a total of 121. The lecture-room, at the new hospital, has been arranged specially for such a course, the value of which is constantly increasing, and which could not be dispensed with, or even lessened in extent, without materially diminishing the resources and usefulness of the institution. The number of evenings devoted to these entertainments will be the same at each building—alternating—so that, hereafter, not less than 242 evenings in each year will be thus occupied. Whenever there are particular attractions at either department, those likely to appreciate them from the other, may be, and frequently are, allowed to attend."

4. The principal items in the statistics of the *Friends' Asylum*, for the year ending February 29th, 1860, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	31	31	62
Admitted in course of the year . . .	12	13	25
Whole number	43	44	87
Discharged, including deaths . . .	14	15	29
Remaining at the end of the year . .	29	29	58
Of those discharged, there were cured .	6	4	10
Died	3	1	4

Died of chronic meningitis, 1; epilepsy, 1; chronic diarrhœa, 1; chronic bronchitis, 1.

"In a disease like insanity," says Dr. Worthington, "affecting an organ of such extensive sympathies as the brain, it is no more than reasonable to expect, that the healty tone of all the other organs would be more or less disordered, and that they would, in some degree, participate in its morbid condition. We accordingly find among the insane generally, a low standard of vital activity, diminution of nervous energy, inability to bear much fatigue, and a tendency to various forms of chronic diseases; the principal of which are, affections of the bowels, and pulmonary consumption; while they are less liable than persons in ordinary health, to all acute inflammatory diseases; unless it be that of the brain itself. It is therefore highly important, in order to counteract this tendency, that the insane should be placed under the most favourable hygienic influences; that they should breathe a pure, warm, and dry atmosphere; that they should have ample opportunities for physical exercise, either in the open air, or in inclement weather, in suitable sheltered apartments; that their food should be abundant and nutritious, and that their surroundings generally, as far as practicable, should be of a cheering and elevating character. By attention to the above requirements, it has been our endeavour to keep up the highest possible standard of physical health among our patients; and during the past, as in former years, we have been rewarded for our care in this respect, by the general healthy appearance of our inmates, and their comparative exemption from those chronic disorders, to which the insane are specially liable."

Of all the cases which have recovered at the Asylum in the course of the last ten years, the average duration of treatment is about twenty weeks.

The collection of books in the library "has been largely increased during the year, by the addition of choice works in the various departments of literature."

Gas, as the material for lighting the establishment, has been introduced in the course of the year.

5. From the medical record of the *Mount Hope Institution* we extract the subjoined numbers:—

	Men.	Women.	Total.
Patients on the 1st of January, 1859 . .	60	84	144
Admitted in course of the year . . .	69	66	135
Whole number	129	150	279
Discharged, including deaths . . .	59	43	102
Remaining January 1st, 1860 . . .	71[1]	106[1]	177
Of those discharged, there were cured . .	17	22	39
Died	9	7	16

Causes of death.—Exhaustive mania, 5; "extensive pulmonary disease," 3; acute mania, 2; "pyæmia from diffused abscess in neck," 1: chronic gastro-enteritis, 2; "infirmities of old age, and impaired general health, with exhausting mental agitation," 2; congestion of brain, 1.

"Fifteen suicidal cases," says Dr. Stokes, "are among the admissions of the past year. * * * In almost every case of this kind the bodily health is manifestly disordered; and when proper remedial means are applied, the propensity to suicide is weakened, or disappears. We generally find redness of the tongue, disinclination for food, irritable bowels, feebleness and emaciation, cold hands and feet. These symptoms, denoting a chronic grade of gastric derangement, require correction before the suicidal propensity will subside. In other cases, a loaded tongue, obstinate constipation, and appearance of hepatic disorder, will be observed. Both of these descriptions are chiefly applicable to patients between forty and fifty years of age. When submitted to proper remedial treatment they commonly improve, although very slowly, the general health having been insidiously impaired and undermined."

In regard to some of the causes of mental alienation, the doctor thus expresses his views:—

"The brain of every man is constituted to perform a certain amount of labour only, without receiving injury; and therefore all *beyond* this must entail evils which may accumulate, by repetition, until its ruin follows. But, it may be doubted if *excessive mental* (intellectual?) *application* is, by any means, a common cause of insanity. Experience shows that the mind is much more liable to be over-excited and injured through the agency of the passions, affections, and other operations of the *will*, than it ever is through any of the faculties of the *understanding*. In almost all instances in which overstrained intellectual exertion is given as a cause, it will be found that some of the passions have been in a state of great and continued activity. The individual has, for example, been long actuated by some such feelings as anxiety, ambition, or a dread of disgrace. Hence, we may conclude that the physical excitement which commonly characterizes the incipient stage of mental derangement, is far more readily engendered by the emotions and passions than it is by any of the intellectual operations of the mind.

"On the same principle it will be found that *religious excitement* is a less frequent source of mental aberration than is generally supposed."

In regard to the last sentence, we may remark that we do not perceive in what manner the asserted fact is derived from the *principle* of the foregoing paragraph. That *principle*, if we understand it, is, that man's moral or emotional nature is more frequently the cause of insanity than is his intellectual nature. If, then, the religious sentiment is, as we have always supposed it to be, a part of that moral or emotional nature, it necessarily follows that its tendency to produce insanity must be greater than that of one of the intellectual faculties. But, let us proceed with our extract.

[1] So given in the report; but, as results from the foregoing figures, they should be 70 and 107.

"Where one man falls a victim to religious excitement, ten others are the prey of exhausting anxieties contingent upon commercial affairs, the fatigues and exhaustions consequent upon over-work and care, or following vicious indulgences in forbidden pleasures." That is hardly a fair comparison, or, rather, contrast: religious excitement is arrayed singly against numerous other causes, and, reasonably interpreted, the sentence reads, "Where *one* falls a victim to religious excitement, *ten* others are a prey to ten, or fifteen, or twenty other causes."

It is well known by all who are familiar with the reports from our institutions for the insane, that the exercise (abnormal if you please) of the religious sentiment is placed, as a general rule, among the leading causes of mental derangement. We now take up the report which, aside from the one under review, is nearest at hand. It is that of the Pennsylvania Hospital for the Insane. In its table of supposed causes, 1973 cases are reported as ascertained. Of these 1973, the number attributed to "religious excitement" is 127. which is equal to 1 in 15½. In other words, according to these data, while religious excitement produces 1 case of insanity, *all other causes, both physical and mental*, produce but 15½ cases. We refer to the report next at hand. It is that of the Southern Ohio Asylum. Its table of "alleged causes" includes those cases alone which were admitted in the course of the year. Of the 65 cases in which causes were "alleged," 8 are attributed to "religious excitement." This is equal to 1 in 8½. We are aware that Dr. Stokes's report is an exception to the general rule upon this point. Of 248 cases under his care, in which the "supposed causes" are mentioned, only 4 are assigned to "religious excitement." This is but 1 in 62.

We fully agree with the doctor in the proposition "Religious excitement is a less frequent source of mental aberration than is generally supposed." We believe that many cases are attributed to this source which really originate in other and far different causes. Yet, that it is a very potent agent in the production of the disorder among the people, as a whole, of the United States, we perceive no room for a man instructed in the subject to doubt. For ourselves, we have so often observed in the increased number of patients admitted into hospitals, the effects of "protracted meetings," "revivals," and other forms of inciting the religious sentiment to action, that we cannot believe otherwise.

Gas, for lighting the building, has been introduced since the preceding report. A section, 117 feet in length, of the new hospital, a few miles from the city, was, at the time the report was written, "roofed in," and it was expected that it would be ready for the admission of patients in the course of the summer of 1860.

6. Our friends at the *Central Ohio Lunatic Asylum* are again in trouble. The State government appears somewhat disposed to cast its eyes backwards from the plough to which it once so bravely put its hand. The legislative appropriation for the support of the asylum in 1858–9 was less by $8000 than the estimates, and the consequence was, the evacuation of two wards, by the discharge of about fifty patients.

	Men.	Women.	Total.
Patients in the asylum Nov. 1, 1858 . .	136	119	255
Admitted in course of the year . . .	80	100	180
Whole number	216	219	435
Discharged, including deaths	105	116	221
Remaining Nov. 1, 1859	111	103	214
Of those discharged, there were cured . .	44	61	105
Died	9	4	13

The causes of fatality are not mentioned.

Dr. Hills writes at some length upon the treatment of insanity. We extract the most important portions:—

"Under mistaken views of the nature of the excitement existing with the insane, it is still too often the case that when any medical aid is called and adopted it is the reverse of what it should be. The indications are inferred to demand antiphlogistics and depletives, and they are applied with a vigilance and perse-

verance worthy of a better cause. * * * * If all the localities in our district where patients are bled and otherwise depleted, *secundem artem*, before admission, were to become vacant, a host of young doctors might speedily find 'locations.'

"In nearly if not quite all cases of insanity, when the true causes are well scanned, they will be found to be depressing agents, that they have reduced the appetite, or the powers of assimilating food, one or both; that they have reduced the sleep, exhausted the normal muscular powers, and increased the excitabilities of the nervous system. In this condition, whatever may be the wild excitement of the patient, the unnatural muscular energy, the rapidity of the pulse, the last thing to be thought of is the lancet, or a drastic cathartic, or an emetic, or low diet, or any other depressing agent. In their stead are wanted a decided anodyne, stimulants, tonics, more and better food. For the former a full dose of opium in some form unless contra-indicated by some special condition or idiosyncrasy; it may be morphine, not the sixteenth of a grain either, but a half grain or a whole grain, and repeated according to effect or want of effect. The stimulant may be milk punch, ale, porter, or wine, if you are sure you have it. The tonic may be almost any of the vegetable bitters or ferruginous preparations, or better if both be combined. The food to be the 'heartiest,' as generally styled, that the patient can be induced to eat."

In matters of theory or opinion, we often quote without comment from the reports, even when our views differ from those of the author of the matter quoted. In the present instance, however, where an important point of medical treatment is concerned, we should hardly feel justified in an omission to record our dissent from some parts of the course here laid down as the proper one to be pursued in insanity accompanied by high excitement. Of the *general idea* of that course we approve; but, in our experience, there has been a large majority of recent cases in which we thought it best to prepare the way for opium and tonics by mild cathartics, and, in many cases, by further gentle action upon the secretions of the alimentary canal. Without such preparation there are very many cases in which opium, in any of its forms, will produce the dry, parched tongue, and other unpleasant effects which sometimes follow its use. Neither would we counsel, in a large proportion of recent cases, that hearty meals of meat and vegetables should be set before the patient until the bowels have been relieved from that abnormal condition in which, so far as our observation is concerned, they are generally found to be. Right-hand errors, no less than left-hand errors, should be avoided; and he who should teach that beef and brandy are the only curative agents for insanity would fall into an error second only in the extent of its injurious consequences to that of those who have looked upon the lancet as the only hope in that disease.

An interesting case of abstinence from food is related in the report. A patient, believing himself to be the Son of God, determined, in obedience to a supposed command, to fast twenty-one days. "He fasted for exactly *twenty days* (the period to which we had shortened it by a little finesse in counting for him) without taking a mouthful of any kind of food or drink during the entire period." This was well proven by all the attending circumstances, and the case is presented as rather a rare one. The effect upon him was but slight for the first ten or twelve days. He then became gradually more excitable, walking the halls almost incessantly, became more thin and gaunt, was more sleepless, and finally became so excited and dangerous—threatening lives, and devising means therefor—that he was removed to another ward, and commanded by another power never to miss another meal. This case is clearly illustrative of the numerous ones in which excitement is produced by want of nutrition, and in which, with those who err in judgment, depletion is the mistaken remedy.

As one exponent of the state of the moral treatment in this asylum, we quote from the report the assertion that "for six months past, not a single instance has occurred in which has been used a camisole, muff, strap, or any other device whatever for personal restraint."

7. Aside from statistical tables, the report of the *Southern Ohio Lunatic Asylum*, for the year ending November 1st, 1859, is unusually brief.

	Men.	Women.	Total.
Patients at the beginning of the year . .	81	79	160
Admitted in course of the year . . .	51	39	90
Whole number	132	118	250
Discharged, including deaths	49	45	94
Remaining at the end of the year . . .	83	73	156
Of those discharged, there were cured . .	26	32	58
Not insane	0	1	1
Died	12	2	14

Causes of death.—Paralysis, 5; epilepsy, 3; mania, apoplexy, ascites, disease of heart, suicide, and necrosis, 1 each.

"During the past year," says Dr. McIlhenny, "we have enjoyed our usual amount of health, with the exception of a few cases of smallpox. Early in June a case occurred in one of the male wards. It manifested itself in a patient about ten days after his admission, he evidently having contracted the disease previously to his being brought into the asylum. By attention to cleanliness, ventilation, and vaccination, its spread was soon arrested; but four persons in the whole house had the disease, and but two of them were well-marked cases."

Among the improvements of the past year are a two story building for a "general work shop," and an artificial "lake," covering three-quarters of an acre, with an ice house upon its shore. P. E.

ART. XX.—*Electro-Physiology and Electro-Therapeutics: showing the best Methods for the Medical Uses of Electricity.* By ALFRED C. GARRATT, M. D., Fellow of the Massachusetts Medical Society. 8vo. pp. 708. Boston: Ticknor & Fields, 1860.

Traité des Applications de l'Electricité à la Thérapeutique Médicale et Chirurgicale. Par A. BECQUEREL, Médecin de l'Hôpital de la Pitié, Professeur Agrégé à la Faculté de Médecine de Paris, etc. Deuxième édition revue et considerablement augmentée; avec 15 figures intercalées dans le Texte. 8vo. pp. 550. Paris: Germer Baillière, 1860.

De la Galvanisation par Influence appliquée au Traitement des Deviations de la Colonne Vertébrale, des Maladies de la Poitrine, des Abaissements de l'Utérus, etc. Par le Docteur J. SEILER. 8vo. pp. 157. Paris: J. B. Baillière et Fils, 1860.

THE employment of electricity in the treatment of disease is daily becoming more and more general. Hitherto the medical use of this powerful agent has been, in great measure, confined to empirics, who, in utter ignorance of its fundamental phenomena, have applied it to every form of disease without discrimination, and oftentimes, therefore, with the most injurious results. Thanks, however, to the patient and valuable labours of Duchenne, Middeldorpff, Matteucci, Weber, Schönbein, Du Bois Reymond, Becquerel, Nobili, Golding Bird, Remak, Althaus, Radcliffe, and others, such a flood of light has been thrown upon the manner in which electricity influences the organism, and the modes of using this imponderable, therapeutically, have been so greatly improved and simplified that a growing disposition is manifested by regularly educated physicians to investigate the whole subject scientifically, and to push to their fullest extent the electrical remedies, which certainly promise to be of much importance.

The simultaneous appearance of the three volumes whose title-pages are quoted above, and of others which could readily be mentioned, shows that electricity is regarded as an established remedy in the long list of therapeutical agents.

In some respects these works differ from each other. Two of them are systematic treatises; the other is a special monograph.

The work of Dr. Garratt, professedly designed for medical students, claims to

be a "plain, practical, and systematic treatise on electro-therapeutics, electro-physiology, electro-pathology, and electro-diagnosis." Judging from the preface, however, the book appears to have been written as much for the public as for the profession; as much with the object of enlarging the sphere of the author's special practice, as for the purpose of instructing physicians and students in the science of electrical therapeutics. In the prefatory remarks, the reader is informed that medical men are not as familiar as they should be with the relationship of electricity and vitality, that the author, however, has made the electrical treatment of "*Neuralgies*" and "*Palsies*" a specialty, and that he is profoundly convinced of the efficacy of electric currents as a remedy capable of producing often a radical cure, especially in nervous affections. He informs us that the publication of his work has been flatteringly requested by many distinguished members of the most venerable medical association in America; that he has had the honour and the advantages of the personal instructions, conversations, correspondence, and encouragements of some of the most renowned philosophers and truly experienced electricians in Europe, to which has also succeeded a ceaseless tide of bedside experiences exclusively in this special practice. He warns all electropaths, electro-physiologists, and travelling galvanizers, not to assume his name and address in any of the States, as they have done heretofore. Finally, to use his own language, "he has aimed to present the whole subject of medical electricity in so clear and simple a manner as to be readily understood by any one of ordinary intelligence;" not only by members of the profession, and the younger candidates for its labours and honours, but also by whoever else may read his work.

Turning to the body of the book we find much that is practically valuable mingled with not a little that might have been discarded from its pages with advantage. Thus, in the first chapter, some fifty pages are occupied, needlessly we think, with an exposition of the well-known principles and phenomena of natural electricity. We say needlessly, inasmuch as the primary truths of electricity are sufficiently well described and explained in most of the elementary works on natural philosophy.

In the arrangement and division of his work, Dr. Garratt follows very closely the order adopted in Becquerel's admirable treatise, the first edition of which appeared some three years ago. In the preface to the edition now before us, Becquerel informs us that during the past three years he has examined the whole subject anew, and made many novel applications of electricity to therapeutics. He has tested also the validity of many of the cures announced from time to time in the various medical journals, and has thus acquired the right to speak authoritatively upon this subject. His book comes to us, therefore, not only as an experimental *resumé*, but also as a critical report, in which the author studies with care the construction and theory of various kinds of electric apparatus; endeavours to establish with precision the general principles which should guide us in the medical employment of electricity, and essays also to determine the exact value of this agent in the different groups of diseases. Lastly, and this we regard as an important feature in his work, he points out with much judgment the cases in which this imponderable is contra-indicated.

Dr. Garratt's work fairly begins with the second chapter, in which is related the early history of the medical uses of electricity. The history of a science is, in truth, of much practical value, inasmuch as it reveals the mode of development of that science, shows the causes of its various successes and failures, and in this manner lends a strong light to future investigations in the same field. The first forty pages of Becquerel's truly scientific treatise are occupied with this subject; but while Dr. Garratt gives us an interesting but somewhat confused and rambling account of the history of medical electricity, Becquerel tells the same story in a manner at once thorough and concise. The various steps in this history he has tersely recorded in their chronological order.

Part 1st of Becquerel's treatise, and Chapter III. of Dr. Garratt's volume, are alike devoted to a description of the electrical instruments and apparatus employed for medical purposes. Chapters IV. and V. of Garratt, and Part 2 of Becquerel, treat of electro-physiology, or the action of currents upon different parts of the organism, and of the various ways in which electricity is medically

applied. The remaining portion of each work, that is to say, Part 3 of Becquerel, and Chapters VI., VII., VIII., IX., and X., of Garratt, discusses the therapeutical applications of electricity.

The brochure of Dr. Seiler owes its existence to a series of experiments undertaken by him in the autumn of 1853 with the view of discovering some ready means of producing local insensibility. In Chapter I. he figures and describes a somewhat complicated induction apparatus of his own contrivance. The physiological effects of this apparatus are explained in Chapter II., and the manner of employing it medically in the third and last chapter, which also contains a detailed account of the successful electrical treatment of a series of cases of spinal curvature, contracted chest of phthisis, laryngitis, asthma, prolapsus, and procidentia uteri, neuralgia, and subluxation of the knee.

Within the brief limits of a bibliographical notice, it is manifestly impossible to enter, at any length, into an exposition of the present state and future promises of electro-therapeutic science. For such information we can only refer our readers, therefore, to the works under consideration as the most recent, and among the most useful upon this subject. The treatise of M. Becquerel recommends itself by its systematic arrangement, the fulness of its details, the scientific skill and care with which the observations recorded therein have been made, and the plain and succinct style in which it is written. From it the reader learns all the diseases in which electricity, in one form or another, has proved useful; he also learns how to apply it with precision; in what cases its use would be injudicious; and what are the dangers or inconveniences of its employment. Dr. Garratt's work is also valuable for the copiousness and importance of its details. These details, however, are badly collected, and the style in which they are clothed is diffuse and often inelegant. Its value as a scientific text-book has been impaired by the evident attempt at giving it a popular character. Nevertheless, its advantages more than counterbalance its faults of commission, and we can recommend it, therefore, to the profession as, in many respects, a useful work. The monograph of M. Seiler is short and well written, and though of limited scope, eminently practical. We regard it, therefore, as an excellent addition to the literature of this interesting branch of therapeutics.

J. A. M.

ART. XXI.—*De la Circulation du Sang dans les Membres et dans la Tête chez l'Homme.* Par J. P. SUCQUET, Docteur en Médecine de la Faculté de Paris, Lauréat de l'Académie des Sciences, Chevalier de la Légion d'Honneur. Paris: J. B. Baillière et Fils, 1860.

MORE than two centuries and a quarter have elapsed since Harvey proclaimed the important fact that the blood flows from the heart into the arteries, from the arteries into the veins, and from these latter back into the heart again. But Harvey died without the satisfaction of knowing the mode of communication between the arteries and veins. It was reserved for Malpighi, Leuwenhoek, Haller, Spallanzani, Reichel, Dœllinger, and many others, in succession, to demonstrate upon living animals and by means of the microscope, the intermediate or capillary system of vessels by which the blood is carried from arterial into venous channels. The manner in which arteries communicate with veins has rarely been studied, however, by means of solidifiable injections. Dœllinger instances as the only example of this kind, the admirable researches of Sœmmering upon the vascular rete of the choroid coat of the eye. By practising this method of investigation, M. Sucquet claims to have discovered in the upper and lower extremities, and in the head, a direct passage between certain arteries and veins, different from and independent of the capillary system of these parts.

It is well known that water injected into the axillary artery returns promptly by the great veins of the arm. This ready return of arterial injections by the veins, known ever since the days of Ent, the friend and contemporary of Harvey, has particularly attracted the attention of our author in connection with the

subject of a derivative circulation, and has led him to institute a series of experiments with some highly interesting results. These results are embodied in the *brochure* whose title is placed at the head of this article.

M. Sucquet found that 100 or 120 grammes of liquid thrown into the axillary artery appeared immediately in the corresponding veins. That the fluid first issuing from the veins under these circumstances was really that injected into the artery, and not the reddish serum remaining in the vessels after death, was shown by the following simple though not wholly conclusive experiment. Water holding in solution ferrocyanide of potassium was injected into the artery, and the first liquid which escaped from the veins was tested with a solution of sulphate of iron. An abundant blue precipitate was obtained. This experiment is not altogether satisfactory. The ferrocyanide of potassium might have diffused itself at a faster rate than the water, and thus mingled with the serous fluids in the vessel before the water did. Be this as it may, however, the sudden appearance of the injected fluid in the veins can only be accounted for, according to our author, by supposing that the whole vascular system of the arm—arteries, capillaries, and veins—was filled at one and the same time by the liquid, which could hardly be the case, the quantity injected being so small, or that there was some immediate communication between the arteries and veins. Apparently in confirmation of this latter idea, M. Sucquet found that the veins of the fingers and hands were the first to swell with the injected liquid; then the subcutaneous trunks of the forearm became tumefied, and, finally, those of the arm. Desirous of determining this matter satisfactorily our author injected into the axillary artery a black liquid capable of becoming solid in the vessels, and therefore readily detected by subsequent dissection. The general color of the arm in certain parts was changed at once. The hand, fingers, and elbow became deep brown. The arm and forearm, on the contrary, presented their natural aspect. The colour of the hand, fingers, and elbow showed that the black injection had penetrated these parts more abundantly than any others. From this circumstance our author concludes that the vessels are more abundant here, and the circulation, during life, more active than in the other parts of the arm. He found the cutaneous arteries well injected; but the capillary network was nowhere penetrated by the injected liquid. This liquid was arrested in the last divisions of the arteries; beyond that the bloodvessels were empty. Where the arteries of the muscles had resisted rupture their fine arborizations could be readily traced, running in different directions between the muscular fibres; the veins, on the other hand, were collapsed and empty. In the adipose and cellular tissues, and in the periosteum, bones, and nerves, the arteries and veins exhibited the same contrast. Everywhere the arteries were filled with injection; everywhere the veins were empty. In the relaxed cellular tissue, which forms a sort of subcutaneous bag at the elbow, vessels appear in abundance, the arterial ramifications penetrating in every direction the areolæ of the under surface of the derm, whence issue the injected venous radicles. In fact, if we trace these radicles, says M. Sucquet, towards their trunks we soon lose sight of the injection and find the vein collapsed. But it is particularly upon the cutaneous surface of the olecranon, he continues, that the communication of arteries and veins becomes apparent. Here, and in the vicinity, the arterioles derived especially from the recurrent arteries of the forearm, or from the arterial branch which accompanies the cubital nerve, ramify in profusion. In the course of each arterial arborization two venous arborizations may be observed, one on each side of the artery. In their course, as at their termination, these three vessels communicate by very short branches going from the artery to the veins.

M. Sucquet found that the skin of the forearm in the rest of its extent preserved its normal colour after the injection. The arteries were completely filled with the injected liquid, but the passage from the arteries to the veins had not been overcome. The trunks of the basilic and cephalic veins only were more or less full of the injection which had come from the veins of the hand. The branches of these two veins which originate in the skin of the forearm, were found empty even to their ultimate roots. The deep-seated radial and cubital veins near the wrist also contained some of the injection which had been received from the veins of the hand, and through anastomosing branches of the injected superficial

trunks. The muscular and other deep-seated veins were empty and collapsed. They, therefore, had not supplied any of the injected liquid to the radial and cubital veins. While in the hands and fingers all the venous trunks were more or less fully penetrated, the injection in the depths of the arm had not gone beyond the arteries. Around the nails, and in the highly vascular tissue under the nails, the injection was abundant. At the ends of the fingers the venous radicles were very full. Those constituting the vascular network surrounding the root of the nails were quite voluminous. The skin on the internal side of the hand, the surfaces of the fibrous envelops of the articulations, the aponeurotic expansions of the extensor tendons of the fingers exhibited arterial and venous ramifications communicating directly together. In the muscles, tendons, and bones of the hand, on the contrary, only the arteries were injected.

The above observations were frequently repeated by our author upon the bodies of the young, of adults, and of aged persons, and always with the same results even when the mode of experimenting had been varied.

In this connection it is interesting to recall an observation made by Bichat relative to the vascular system of the upper extremities. "From the arteries of the palm of the hand," says the illustrious deceased, "originate a crowd of branches very large in size and placed closely together. There appears, indeed, to be a want of proportion between the vessels and the organs. The largest branches are precisely the collateral ones, placed upon the fingers where no muscles are found. We certainly cannot regard these latter vessels as uniformly destined for the nutrition of the part upon which they are found."

It will thus be seen that the same arteries in which M. Sucquet endeavours to demonstrate the existence of a free and direct communication with the veins, are spoken of by M. Bichat as more numerous than those of any other part of the arm, and as carrying to the hands a quantity of blood which can scarcely be employed in the process of nutrition.

The veins of the fingers and hands unite to form two great trunks, known as the cephalic and basilic veins. All anatomists agree that these two veins differ in several respects from others in the arm. They are superficial, subcutaneous, unaccompanied with parallel arteries, and form, ultimately, a distinct venous system.

According to M. Sucquet, if we examine this system closely we shall find that particular veins correspond accurately with particular arteries of the fingers and hands. Special arteries are succeeded by special veins, and these latter constitute the channels through which flows the blood returning from the fingers and the hands. In the arm the blood does not pass everywhere in the same manner from the arteries into the veins. In the hands and the fingers the blood passes directly and with great facility from one set of vessels to the other. In other vessels of the arm this passage is indirect, and is effected more slowly and with difficulty. At the extremity of the arm there is a direct circulation in no way connected with nutrition; in the arm, as a whole, there is an indirect and nutritive circulation.

If these observations of our author be correct, it will be seen that the study of the circulation of the blood is far from being as simple and uniform as is generally supposed. All that is at present known concerning the circulation of the blood in the arm has been derived from the study of the cephalic and basilic veins chiefly. Placed under the eyes and hands of observers these veins have been examined more carefully than any others. We now know that they receive the currents of blood which come by the special and direct route of the arteries of the hands and fingers. They have apparently nothing to do with that other stream of blood which flows amidst the deep-seated parts of the arm, and which binds together, as it were, the life and motions of this organ, and of which we have but an imperfect knowledge. In proof of his statement that the circulation, as it goes on in the special venous system of the hands and fingers, is different from the general or nutritive circulation of the arm, our author refers to the intermittent character of the circulation in the veins of the hands. Sometimes these veins receive not a drop of blood, sometimes they receive only a small and slow stream, at other times they are filled with a voluminous and rapid current. They exhibit every gradation, therefore, between emptiness and

turgescence. This is not the case with the general circulation, the arrest of which would be incompatible with nutrition. One of the essential conditions of healthy nutrition is that the supply of blood to the part should be continuous, incessant.

During the cold of winter, according to our author, the basilic and cephalic veins remain whole hours, even entire days, without giving passage to the blood, and yet the arm retains its sensibility and motility. Under these circumstances the nutritive circulation continues everywhere in the hand as well as in the arm; that of the cephalic and basilic veins alone is interrupted. These two circulations are not, therefore, bound together. The first remains constant; the second may falter or even disappear altogether for a greater or less length of time. During the heat of summer, after a generous repast, the veins of the hands swell up; but their increased volume is not accompanied with a similar venous turgescence of the whole arm.

Whatever may be the point of view in which we are placed, says M. Sucquet, it always results from our examination that the circulation of the blood in the veins of the arm is different from that in the veins of the hand. When a fit of anger precipitates the movements of the heart and causes a superabundant wave of blood to be driven into the arteries of the arm, we must not infer that the blood is driven with equal force in every direction. The laws of hydraulics are against this supposition. The blood is directed towards those points, chiefly, where its flow finds the least resistance. As the passage from the arteries into the cephalic and basilic veins is the freest, it is towards this point that the fulness of the arterial system is directed. It is by this means that the habitual equality and constancy of the rest of the circulation in the arm is maintained. It is upon this hydraulic law that the doctrine of derivative or revulsive bleeding is based. "When the blood flows readily by the veins," says Haller, "its march becomes at the same time more rapid in the corresponding arteries." The cephalic and basilic veins receive, therefore, the transitory or permanent fulness of the arteries of the arm; their circulation is a derivative or diverticular circulation. When sudden fright, cold, hunger, or any of the depressing causes lessen the action of the heart, these veins collapse or empty themselves, because the arterial current subsiding with the diminished power of the heart, exhausts itself by its successive distribution to the different parts of the arm.

From the foregoing statements, condensed from the pamphlet before us, it would seem that there are two distinct circulations in the upper extremity. The one is general, permanent, regular, and nutritive; the other localized in certain vessels of the elbow, and above all, in the arteries and veins of the hands, is inconstant, irregular, and has for its use the reception of the superabundant blood of the arterial system of the arm, counteracting in this manner the frequent and marked irregularities of the latter, and preserving, finally, the constancy and equality of the interstitial circulation.

Liquids injected into the crural artery escape readily by the crural and saphenous veins; more quickly and copiously, however, by the former than by the latter. After the injection the skin of the thigh and leg preserves its natural colour, that of the knee and foot, on the contrary, becomes brownish, as in the elbow and the hand. The vessels upon the anterior part of the knee are arranged in a remarkable manner. The arteries are here more numerous, less branched, and more filiform than those of the leg and thigh. Instead of pursuing a solitary course, they are accompanied with numerous venules filiform like themselves, and filled with injection. The arteries and veins communicate with each other, not only in their course but at their termination.

When the arteries of the thigh and leg have been injected the veins of these parts still remain empty. In the foot, on the contrary, the veins are more or less full. The two saphenous veins at their origin receive the injection from the arteries around the nails and in the skin of the external and internal margin of the foot. At this point there are numerous communications between the arteries and veins. Upon getting out of bed in the morning, a score of these distended veins exhibit themselves here, all running towards the curve which the saphena forms in this region. Upon dissecting the sole of the foot we find frequent communications between the arteries and veins.

Our limited space will not permit us to reproduce in detail all the particulars concerning the arrangement of the vascular system of the lower limbs. It appears, however, from our author's researches, that the derivation of blood in both the upper and lower extremities has been conceived upon a uniform plan, and realized in analogous parts. The vessels of the elbow and the knee, the fingers and the toes, the skin of the thenar eminence, and that of the internal side of the foot are the first to afford a direct passage to the blood or to any fluid traversing the great arteries of these parts.

Thus, then, it appears that in the lower extremity, as in the upper, there are two circulations. One of these is constant, equable and nutritive; the other is supplementary, inconstant, unequal, and derivative. It is limited to certain vessels of the knee, and to certain arteries of the foot, which anastomose with the saphena, and with the deep-seated veins at the end of the limb.

M. Sucquet next examines the circulation in the head. He finds that injections thrown into the primitive carotid artery return by all the jugular veins without having visibly distended the veins of the head. Having tied the vertebrals and one of the primitive carotids, and injected the other carotid with a black plastic liquid, he found that certain parts of the head became discoloured. The lips, the nose, the forehead, the tip of the ears and the cheeks grew brown. The inferior jaw, the temples, and the skin on the posterior part of the head, preserved their natural aspect. The head being dissected, under these circumstances, the facial vein was found empty at its entrance into the internal jugular, in its course over the inferior maxillary, and on a level with the commissure of the lips. The branches which it receives in its course, and the inferior labial vein, were also empty. The superior labial, on the other hand, and that part of the facial on the same level, and its branches beyond this point were all injected. Around the nostrils the injected vessels formed a thick circle; they were also very numerous on the under surface of the skin of the nose, and the mucous membrane which covers the fibro-cartilages, the septum nasi and the inferior turbinated bones. The venules coming from this network empty into the facial vein, or, extending over the bridge of the nose, they reach the angular vein, or even the intra-orbital branches of the ophthalmic.

Carefully and minutely our author proceeds to trace out and make known all the vessels which have been penetrated by the injection. From this examination he concludes that in the head, as in the superior and inferior extremities, there is, besides the nutritive circulation, another which is carried on in the facial, ophthalmic, and auricular arteries, and which serves to receive the superabundant blood that may have been driven into the arteries, and to turn it into the venous system chiefly by the facial vein. The face is the seat of the derivative circulation of the head, as the hands and the feet are the seats of the circulation in the upper and lower extremities.

The concluding pages of the highly interesting pamphlet under consideration are devoted to some general remarks upon the nature, importance, and practical uses of the derivative circulation. These remarks are full of interest, and in many respects highly suggestive. J. A. M.

ART. XXII.—*Transactions of the Obstetrical Society of London. Vol. I. For the year* 1859. *Together with a Report of the Inaugural Meeting of the Society, a List of Officers, Fellows, etc.* London: 1860. 8vo. pp. 347.

TOWARDS the close of the year 1858, at a meeting especially convened for the purpose, the leading teachers and practitioners of obstetrics, of London, resolved to form themselves into a society for the advancement of the knowledge of their especial branch, and of the pathology and therapeutics of the diseases of women and children; with an invitation to their obstetrical brethren throughout the kingdom to participate with them in the furtherance of their object.

The society thus formed went into active operation in January, 1859, and now

includes among its ordinary members some of the most distinguished practitioners of midwifery in the British metropolis and its vicinity. At its meetings, which are held on the first Wednesday of every month, except August and September, cases are related, oral communications made, pathological specimens presented, and papers read and discussed by the members. Such of the cases and papers thus communicated as are considered of sufficient value by a standing committee of twelve Fellows are inserted in the printed transactions of the society.

The first volume of these "Obstetrical Transactions," which now lies before us, speaks well for the industry and for the talents of the members. Its contents are in the highest degree interesting, whether as facts illustrative of important points in the theory and practice of midwifery—investigations tending to shed new light upon the proper management of tedious, difficult, complicated, and obstructed labours, or observations illustrative of the pathology and therapeutics of the pregnant and parturient female and of the new-born infant.

The leading object of the Obstetrical Society of London is to collect and concentrate the accumulated experience of the obstetricians of the metropolis and provinces of Great Britain, so as to render this inestimable fund of knowledge available for the instruction of the profession at large—an object of the highest importance, and one which is not difficult of accomplishment by the hearty co-operation of the parties immediately interested.

In the address delivered by the President of the Society, Dr. Edward Rigby, at the initial meeting, January, 1859, the importance, within the domain of obstetrics, of carefully-observed and accurately-recorded facts over mere speculative disquisitions is strongly enforced.

It is not our intention to notice all the contents of the volume before us. Besides several somewhat elaborate papers in reference to important points connected with the practice of midwifery and the pathology of the pregnant and parturient states, there are two or more statistical records of midwifery from private practice, and some twenty-five or thirty cases in the departments of obstetrics, and of the diseases of women and children—all of which are replete with instruction—many of very considerable interest. To present such an account of these as would be satisfactory, would extend our notice to an unreasonable length. We can permit ourselves only to attempt a brief notice of some of the more prominent of its contents.

Among these is to be ranked the excellent inquiry, by Dr. W. Tyler Smith, into the means for *abolishing craniotomy from obstetrical practice*, in all cases where the fœtus is living and viable. Of this an analysis will be found in our No. for April, 1859, p. 567 *et seq.*

A paper by Philip H. Harper, inserted in a subsequent portion of the volume, has a close relationship with the one just noticed. It is on the more frequent and prompt use of the forceps in labour as a means of lessening both maternal and fœtal mortality. The paper is one of very great interest. The conclusions of the author are based upon an obstetrical experience, extending over a period of twenty-one years, during which a very large number of cases of labour were witnessed by him. The classes among which these cases occurred were, during a part of the time, those engaged in agricultural and kindred pursuits, and during the remainder of the time the inhabitants of a town and mining district. A large proportion of the cases, therefore, happened in females engaged in the usual employments, and exposed to the influences peculiar to the wives of the labouring classes in the agricultural and mining districts of Great Britain.

The paper is divided into eleven sections, which treat:—

1. The ill effects produced in the mother, either locally or generally, by the use of the forceps. 2. The ill effects produced by its use upon the child. 3. The causes of death in mother and child after the use of the instrument. 4. Proof that not only is the danger to the mother and child increased by the long duration of the second stage of labour, but that the convalescence of the former is tedious and unsatisfactory in the same ratio. 5. The relative danger of death after tedious labour, forceps delivery, and craniotomy. 6. The power which may be exerted by the forceps when applied with a view to terminate labour. 7. The

states in which the forceps ought to be used. 8. The period of labour at which the use of the instrument is indicated, and the symptoms showing the propriety or necessity for their application. 9. A short abstract of the forceps cases that have come under the author's own care. 10. The cases in which the forceps may be more frequently used, not only with safety, but with great positive advantage. 11. Proofs that the more frequently the forceps are applied, in proper cases, the more maternal and fœtal lives will be saved, and the greater will be the freedom from the after consequences of protracted labour.

The paper of Dr. Harper is a highly instructive one. The leading doctrines inculcated by the author in respect to the use of the forceps in cases of difficult, complicated, or impeded labour, have been long recognized and acted upon by the obstetricians of the United States, in common with those of the continent of Europe; while their importance has been, in a great measure, overlooked by the obstetrical teachers and practitioners of Great Britain.

Dr. H. denies that there is any especial risk to the mother which necessarily attaches to the use of the forceps, and that the various injuries and other ill effects, which are usually attributed to the instrument, are not the result of its use, but of its abuse. In most of the cases where the death of the mother takes place in forceps cases, he believes it is the result of the length of time the labour has lasted before the forceps were resorted to. That so long as it is made the last resort in tedious labour, so long will the maternal mortality after their use appear to be very high. He has shown, from the only statistics which give the necessary data, that where the forceps are freely used, while 1 mother in 22, and 1 child in 5 died in unassisted tedious labour, but 1 mother in 56, and 1 child in 8.4 died where the forceps were employed; and 1 mother in 10 died after craniotomy; showing that the risk to the mother is less after the use of the forceps than after craniotomy, or even unassisted tedious labour.

Dr. Smith has also adduced facts to prove that the forceps may be safely employed to compress the head of the child when resorted to early and properly applied. In a large number of cases of tedious labours, from abnormal or diseased action of the uterus itself, he has shown that the forceps are an invaluable aid, and should be used most freely. That the period for their use is early in labour, as soon, indeed, as the os permits, and long before the maternal system has begun to suffer, either locally or generally.

A highly interesting paper on the transfusion of blood, its history and application in cases of profuse uterine hemorrhage unattended with organic disease, is communicated by Dr. Charles Waller. In the course of the paper, a case is related of extreme exhaustion from hemorrhage subsequent to delivery in which transfusion of blood was attended with, apparently, the very best results.

Dr. Waller describes a syringe which would seem to be well adapted for the transfusing of blood. By a funnel which communicates with the barrel of the instrument, the blood is received immediately into the latter from the orifice whence it is derived.

Dr. Robert Barnes relates fourteen cases in illustration of the physiology and treatment of placenta prævia. In our number for July of last year will be found an abstract of the leading physiological and therapeutical propositions, which the author has deduced from the facts developed in this paper.

A series of cases of polypus of the uterus are detailed by Dr. Francis Elkington, with interesting clinical observations. These cases are well adapted to illustrate many points connected with the phenomena, diagnosis, progress, and treatment of the usual forms of polypous growths.

A very sensible paper on the hydatidiform or vesicular mole; its nature and mode of origin, is from the pen of Dr. G. Hewitt.

The author denies that the diseased structures in question are true hydatids or proper cyst formations, but adopts, with some modification, the opinion advanced by Gierse, of Berlin, that they are the result of hypertrophy of the natural structures found in the chorion villi, with secondary œdema.

Dr. Hewitt shows that the healthy chorion villi, when examined at an early period, are found to consist of processes branching out and dividing like the branches of a tree. These processes, as Velpeau long since pointed out, are furnished with clavate terminal enlargements. They consist of a homogeneous,

transparent membrane, on the surface of which are seen nucleated cells in close apposition. When cut into, the processes present a network of cellular tissue. It is these villi which become transformed into hydatidiform masses, by a change altogether irrespective of the nucleated epithelium cells which cover the surface. In the altered villi the cells over the enlarged portions are seen to be separated from one another, as the result of the distension of the part beneath, to which distension of the interior of the villi by a serous fluid the enlargement is due. The superficial cells would appear to have undergone no other change than simply a very slight distension of their interior by serous fluid. In the hydatidiform mole, therefore, it is evident that we have not a new formation, but simply an alteration and degeneration of previously existing structures.

The changes in the chorion villi which result in the production of the hydatidiform mole are, according to Dr. H., secondary to, and a consequence, not a cause, of the death of the embryo. The vesicular transformation being nothing more than a degeneration of structures arrested in their development, which arrest of development takes place simultaneously with the death of the embryo.

"If we examine," he remarks, "the state of the villi during the second month of fœtal life, we find that at that time their vital activity is very great, they are engaged in supplying nourishment and means of growth to the embryo. During the same period, also, a portion of these villi become transformed and developed into the fœtal placenta, while the remainder disappear. The vitality of the fœtus seems to be the circumstance which determines the further development of the placental villi; and the development of the fœtus and of the placental chorion villi proceeds *pari passu*. There are no facts showing that the embryo being dead, the chorion villi can become subsequently developed into bloodvessels, as is the case when the life of the embryo persists. But the death of the embryo does not necessarily determine the cessation of *vitality* in the chorion villi. In order that this may be the case, it is necessary that a separation be effected between the uterus and the decidua. As long as the decidua remains connected with the uterus, the chorion villi will continue to enjoy a certain degree of vitality; but, the embryo having ceased to live, this vitality is bereft of developmental power, and the chorion villi, though they may actually grow and increase in size, retain the essential structure which they possessed, when the death of the embryo took place. Accordingly, if the death of the embryo occur very early, and before the appropriation of certain of the villi to form the fœtal placenta has commenced, the ovum may continue to grow, and may remain in the cavity of the uterus, and in such a case the whole of the chorionic membrane would give rise to hydatidiform villi. If, on the other hand, the death of the embryo be postponed until the formation of the fœtal placenta has commenced, the hydatidiform degeneration will be necessarily limited to the part of the chorion which is in contact with the decidua serotina."

The size of the hydatidiform cysts differs in different cases. They continue to grow, as long as the uterus is tolerant of their presence, by virtue of absorption from that part of the decidua which remains still connected organically with the uterus.

"After the chorion villi have attained a certain degree of development," Dr. H. supposes that "they are no longer capable of undergoing the hydatidiform degeneration. Regular bloodvessels having taken the place of these processes, the conditions necessary for the production of the peculiar vesicular enlargements no longer exist. The period within which the hydatidiform degeneration may occur, does not probably extend beyond the middle or end of the third month at farthest, and if the fœtus perishes subsequently to this time, the hydatidiform degeneration will not be met with."

In respect to the cause of the early death of the embryo in cases of vesicular mole, Dr. H. believes that it consists in a certain degree of sustained contraction of the uterus in the early weeks of pregnancy, sufficient to reduce materially the supply of blood sent to the maternal membranes, through which the fœtus is nourished. The first result, under such circumstances, is the death of the fœtus; the second—supposing the ovum still to retain its connection with the uterus—the degeneration of the chorion villi above described.

In many cases the contraction of the uterus is due to mammary irritation from

suckling during the first weeks after conception, a common cause, as Dr. Barnes has shown, of abortion. The development of the embryo may be arrested, Dr. H. remarks, from a variety of other causes, into a detail of which he does not, however, enter.

Dr. Robert Barnes contributes a paper on the risk to life in first and subsequent pregnancies. He regrets the want of a sufficient amount of the proper statistics requisite for the solution of this question, which is one of deep interest in itself considered, and of no trifling importance in its bearing upon the subject of life insurance in the case of child-bearing women. In hopes that private practitioners may be induced to keep such a record of their cases as would be adapted to furnish the necessary data for the solution of the question referred to, Dr. Barnes furnishes a form after which the record should be made.

"If I were to give my own impressions," he remarks, "I should say that the risk of a first pregnancy is certainly greater than that of a second, third, or fourth. Women lying-in for the first time have to prove their puerperal capacity. At the first delivery they encounter those difficulties which arise from faulty pelvis conformation, and those perils which arise from constitutional defects. These difficulties and perils, if surmounted, being revealed at the first labour, may, in some cases, be averted or lessened in the future. There can be no doubt that women pregnant for the first time are more liable to difficult labour and its consequences, such as exhaustion and phlebitis, to convulsions, to complications calling for instrumental aid. Women who have gone through one labour, or two, or perhaps three, without complications, may be regarded as running the least risk from pregnancy. But after the fifth labour I believe it will be found that the risk begins to rise rapidly, so that in the eighth or subsequent pregnancies the risk will be fully equal to that of a first pregnancy. Pluriparæ, according to my observation, are more especially liable to malposition, to retroversion of the uterus, to hemorrhage from placenta prævia, from accidental separation of the placenta, and also from atony of the uterus. They are more liable to disease of the uterus, and attendant diseases of the placenta, leading to adhesion and hemorrhage. And not seldom they enter upon labour with minds depressed and powers impaired by the inroads made upon their constitutions by previous child-bearing and the cares of maternity."

Some few of the remaining articles contained in the present volume of "Obstetrical Transactions," have been presented to our readers during the past year in the proper department of our quarterly summary. The entire volume holds out a fair promise of what these transactions will be in future; leading us to believe that to the coming volumes we may confidently look for much that shall increase our knowledge in the science and art of midwifery. D. F. C.

ART. XXIII.—*Report on the Health of the Waterguard and Waterside Officers of Her Majesty's Customs during* 1859. By J. O. McWILLIAM, M. D., F. R. C. P., F. R. S., C. B., R. N., Medical Inspector of Her Majesty's Customs. 8vo. pp. 88: London, 1860.

IN the report made by Dr. McWilliam for the year 1858, noticed in our number for April last, it was shown that, notwithstanding the extremely offensive condition of the river Thames, from the accumulation in it of the sewage of London and other putrescent matters, the health of the officers and men in the British revenue service who are employed for many hours, day and night, along and upon the river, remained unaffected. In the report before us, for the year 1859, it will be found that the condition in respect to health of the persons referred to was, during the latter year, equally favourable.

The number of men employed in the waterside department during 1859 was reduced to 461, by the withdrawal of 50 weighers, whose employment being only occasional, rendered uncertain the amount of sickness occurring among them, and by the transfer of 18 gate-keepers to the waterguard department. The entire strength of the river service in 1859 amounted to 1,299.

From tables given in the report it appears that the number of attacks of sickness during 1859 was, in the waterguard 40, and in the waterside department, 14 below those of 1858, and in both cases they were below the average of the preceding twelve years, although up to 1857 the waterguard was about 100 short of its present strength.

The daily sick, and the percentage in the waterguard were somewhat below and in the waterside department slightly above the average. The high percentage of sickness among the tidewaiters during the year 1859, relatively to that of the other classes of officers of the same department, is, Dr. McWilliam observes, as remarkable as it has been in former reports.

The meteorology of the *first quarter* of 1859 was, we are informed, altogether exceptional. Unlike the first quarter of 1858, which was extremely cold, the weather was unusually mild and dry—the mean temperature (43.3) exceeding by 4.9 that of the mean of 88 years, and the rain-fall being 1.6 below the average.

With the exception of some chronic cases left from the previous year, the general health of the waterguard was favourable, the additions to the sick list during the quarter having been 178, against 195 in the corresponding period of 1858. A case of fractured patella, and one of accidental drowning occurred in this department. A tidewaiter was discharged as unfit for service, on account of epilepsy, and a waterman, long the subject of asthma, was superannuated.

In the waterside department the general condition of health was also good; but there were several deaths in this department from long standing disease.

Second quarter. In the early part of April the temperature was 7° above the average; during the last three weeks of the month, however, the weather was colder than usual, and N. E. winds prevailed. The whole of May, with the exception of the last week, when the wind changed, was cold, and during the third and fourth weeks a considerable quantity of rain fell. On the 20th of May rain fell to the extent of .77 inch, the effect of which rainfall is adverted to in another part of the report. During June, throughout, the temperature, although not so high as during the same month of 1858, was above the average. Rain fell occasionally during the first and second weeks, and in the third week there were thunder storms. North-east winds prevailed until the last week in June, when there was a change to south and south-west.

The total admissions to the sick list during the quarter were 162, against 202 in the same quarter of the previous year. With the exception of three or four acute cases, there appears to have been little disease of any kind in either the waterguard or waterside department. Some cases of diarrhœa appeared in June. Not more than twelve in the two departments were such as to necessitate the absence of the officers from duty.

A gate-keeper, subject to asthma, a tidewaiter, with liability to apoplexy, a waterman with chronic bronchitis, a tidewaiter, worn-out with age and rheumatism, and an extra weigher, afflicted with rheumatism, were placed on the superannuation list. There was only one case of death during the quarter. It occurred in a tidewaiter who was placed (April 9th) on board a vessel at Gravesend from St. Michael's, with fruit. The vessel proceeded to London and discharged her cargo, when the officer left her, and returned, on the 12th, to his residence at Gravesend. Next day he was placed on the sick list, with symptoms of ague, which from the intermittent passed to the remittent grade; the patient died on the 29th of April. He stated that he first sickened after inhaling the stench from a sewer, near to which the vessel he had in charge was moored. Without denying the possibility of his attack being caused by the emanations from the foul sewer, it appears to Dr. McWilliam, nevertheless, more probable that the germ of the disease had been imbibed by the patient before going on board the vessel on the 9th of April. Ague, it is well known, is an endemic of lower Gravesend, having become, according to Dr. Russell, within the last two years more than usually prevalent there, in common with other parts of the coast of Kent.

The weather during the *third quarter* of 1859 was remarkable for a great increase of atmospherical temperature. July throughout was exceedingly hot, the thermometer on the 12th reaching 92° Fahrenheit, on the 13th 93°, and on the 18th 93°. During ten successive days the mean temperature of the day and

night exceeded 70°, which, Dr. McWilliam remarks, is beyond anything of the kind hitherto recorded upon trustworthy evidence.

Coincident with the increase of temperature, there was a marked rise in the mortality from diarrhœa among the general population of London. In the week ending July 23d, diarrhœa proved fatal to 415 persons in London, a mortality greater than that of any week in previous years from the same disorder.

The number placed on the sick list in the two departments from all causes was 252, very nearly the same as that (251) of the corresponding quarter of 1858. The actual amount of diarrhœa which occurred during this period it was impossible to ascertain, as many, more especially those on shipboard, treated themselves with the medicine supplied them in advance, and made no further application for advice. There were in all 72 cases of diarrhœa causing temporary absence from duty—of these, two manifested symptoms of a decidedly choleraic character.

The stench of the river, although frequently noisome, did not appear to increase to an extent commensurate with the unusual elevation of temperature. It seemed to Dr. McW. probable that the lime and other agents employed in the sewers had, in a considerable degree, arrested the progress of decomposition in the sewage, and the consequent evolution of offensive gases from the river.

Two of the department were superannuated for infirmities incident to age. One who had been only a short time in the service, was discharged because his constitution was not found adequate to the duties of his office. There were two cases of dysentery, of which one proved fatal in little more than a week, and the other recovered after being in a state of extreme exhaustion. There was one death from drowning.

There were frequent variations of temperature during the fourth quarter of 1859, which had a marked influence upon public health.

October began with unusually mild weather, which lasted until the end of the third week, when the temperature fell 12° below the average of the same period. November also commenced with mild weather. On the 9th, however, the temperature suddenly fell, and a period of intensely severe cold set in, which continued until the end of the third week in December. This period was marked by frequent fogs, and occasional falls of rain and snow. The latter part of the month was mild, with wet weather, and south-westerly winds.

In consequence of the defect of temperature, compared with that of the corresponding quarter of 1858, there was a proportionate increase of admissions to the sick list. The prevailing complaints were rheumatism, sore throat, and affections of the respiratory organs.

Six of the waterside department were superannuated during the quarter; four died from disease, and two from accident.

With respect to the state of the river Thames during the summer months of 1859, Dr. McWilliam remarks, that its foul condition in the previous year was preceded by a heavy fall of rain, which flushed the sewers, and caused the discharge of their accumulated contents into the river. So far as he observed there was no complaint in 1859 of the condition of the river until the 20th of May, when there was a heavy fall of rain, which washed an immense quantity of sewage into the river at the time most favourable for its detention there; that is, when the tide had flowed about a third. From that time the stench from the river, with some very notable intermissions, sensibly increased as the temperature of the river exceeded that of the atmosphere. The mean temperature of the air and of the river was greater in June, 1858, than in the same month of 1859; but both the atmospherical and river temperatures in July and August, 1859, greatly exceeded those of the corresponding month of 1858; while the temperature of the river, as well as of the atmosphere, in September, 1859, was surpassed by that of the same month in 1858.

When the high temperature, and its necessary consequence, rapid evaporation, set in, the river was already almost unprecedentedly low, from the small amount of rain which fell in the latter months of 1858, and throughout the spring and part of the summer of 1859. The freshet or ebb-flow thus impoverished had but little force, and allowed the tidal wave to advance much beyond its usual limit in the river.

The mud banks on the river-sides and in the shallows, ploughed up by this strong up current, largely contributed to the pollution of the river at the flood tidal period, while the corresponding deposition and extensive mud exposure maintained the offensive smell during the ebb.

It was commonly observed during the summer of 1859, that although the river was offensive in the latter end of May, and in the three following months, more especially in July, there were remarkable intervals of comparative freedom from smell, and that a heavy rainfall at one time increased, and at another time diminished, the river effluvia. Those opposite results from rain depended, as Dr. McW. remarks, upon the state of the tide, and the amount of sewage in the sewers at the time it fell. Thus, by the rainfall of the 20th May an accumulation of sewage was brought into the river shortly after the tide had begun to flow, and being thus carried far upwards, was long detained, impregnating the river with an offensive odour, while the intromission of sewage into the river, from the rain storm of the 12th June, took place at ebb tide, and was carried well down the river; this, with the dilution of the water from the increase of the freshet, led to a marked improvement in the condition of the river, which lasted ten or twelve days. There were, also, periods of marked improvement in the state of the river when there was no rain. Thus, it is stated, there was an absence of rain from the 4th to the 18th July, and the river, after being reported on the 12th as "very bad" at London Bridge, underwent a remarkable change for the better during the four days following. Rain to the amount of 2.1 in. fell between the 18th and 21st July—more than half of it on the latter day, at low water, the period most favourable for the detention of evacuated sewage, and the consequent pollution of the river water, yet the effluvium sensibly decreased from this time up to the 10th August, when, after a fortnight's interval of comparative freedom from smell, the river was again reported as "thick and smelling badly" at London Bridge. A favourable report was also made on the 27th of the same month, after .62 in. of rain had fallen at Chiswick on the 25th. By this time, however, the temperature of the river, as well as of the air, was decreasing, and there was little or no complaint of the river afterwards. The London Bridge observations were continued until the 20th of September, but, with the exception of one or two days at the beginning of the month, the river may be said to have been nearly free from offensive smell. From the reports of the Customs officers, from observations taken three times in the 24 hours during the hot months, by an officer from the Thames Conservancy, from his own observations, and from information from various other sources, Dr. McW. is of opinion that the river, although on one or two occasions, for a short while, more offensive, was much less continuously noisome during the past than during the previous year, notwithstanding the great and prolonged increase of temperature in the summer, the preceding defective rainfall, and consequent diminution of fresh water, and other unfavourable influences of 1859. Dr. McW. thinks it must be admitted that such a result, under the adverse circumstances stated, was due in a great measure to the deodorizing measures carried out during the summer months by Professor Miller, of King's College.

These measures were directed to the sewage while yet in the sewers, and were commenced about the end of the second week in June, with lime only. Lime to the extent of about one hundred tons, and chloride of lime to the amount of from ten to twelve tons, were, during the hottest weather, mixed with the drainage water at from 200 to 600 yards above the outlet of the sewers. The use of the lime was discontinued at night after the 12th of August, and both lime and the chloride were stopped after the 3d of September. Carbolic acid, a species of creasote from coal tar, was tried for some time upon the Fleet sewer; but it was abandoned on account of the complaints made by the inhabitants of the smell caused by it.

The total quantity of disinfectant agents used during the season were, as we learn from the reports of Dr. Miller and Mr. Bazalgette, about 2,481 tons of chalk lime, 478 tons of chloride of lime, and 56 tons of carbolic acid, at a cost of about 17,733*l.*—that is, almost $89,000.

The favourable sanitary condition of London during the summer of 1858, notwithstanding the offensive state of the river, had the effect, we are told, of

quieting the apprehension that the public health would be endangered in the event of the river again becoming foul.

From the report of the Registrar-General, it appears that the year 1859 showed an increase in the birth-rate, and a decrease in the death-rate of the country. The deaths in London, however, during July, August, and September, exceeded the average. Diarrhœa was unusually fatal over the metropolitan area—the disease having proved fatal to no less than 415 persons in the course of a single week in July. This excess of mortality, according to the Registrar-General, was owing to the high temperature of the atmosphere facilitating the decomposition of impure refuse under the houses, in the streets, and in the river.

Dr. McWilliam presents a series of tables showing the cases of disease from all causes, which occurred among the revenue officers employed on or near the river Thames, during the months of June, July, August, and September, from 1855 to 1859 inclusive—the number of daily sick, and the cases of diarrhœa observed during the same periods.

The officers referred to—from the fact that their duties require them to spend their entire time either upon the river or in its immediate vicinity—were necessarily fully exposed, at all hours and seasons, to whatever morbific emanations may be supposed incident to a river such as the Thames, receiving not merely the offals from the shipping, with which its wharves and docks are always crowded, and from the houses, workshops, and public institutions along its shores, but the entire sewage of one of the largest and most populous metropolises of Europe. The almost entire exemption from disease of the revenue officers employed upon the Thames, during the summers of 1858 and 1859, when the waters of the river had become thick and foul with putrescent matter, and gave out the most noisome effluvia, is certainly a most curious and startling fact, which would seem to demand a very essential modification of our present views in relation to certain points connected with the etiology of disease.

From the tables given in the report before us, showing the number of cases of disease, which occurred during the months of June, July, August, and September, of the years 1855 to 1859 both inclusive, among the revenue officers stationed on the river Thames, it appears that the attacks of illness during 1859 were not only below those of 1858, but below the average of the corresponding months of the four previous years. That the number of daily sick was below the average in the waterguard, but above it in the waterside department, and that, with respect to diarrhœa, the number of cases during the four warm months was during 1859 in excess of that of 1858, but as nearly as possible the same as the average of the four preceding years.

"What," remarks Dr. McWilliam, "may be the result of a succession of hot seasons with a foul state of the river, it is impossible to predict; but, judged by the experience of the summers of 1858 and 1859, it would appear that exhalations from the river, however noisome and offensive to the senses, and however much they may demand the employment of means for prevention or mitigation, do not necessarily produce those forms of disease usually ascribed to malarious origin. Diarrhœa and cholera were much apprehended in 1858, but the former disease was less prevalent than usual, and the latter fortunately never made its appearance. In 1859 there was more diarrhœa among the Customs officers than the average of the four previous years."

Cholera, moreover, we are told, was brought into the Thames from the continent, by at least three vessels in the course of the summer, but the disease in neither instance spread; showing that the filthy condition of the river was of itself incapable of generating cholera, while it presented no fitting medium for the germination of the seeds of the disease when introduced from abroad.

As a fact replete with the deepest interest to a community like Philadelphia, the sewerage of the larger and most populous portion of which is into a river having some features in common with that of the Thames at London, we may mention that in March, 1860, the Thames was fuller and cleaner than it had been for several preceding years. This has been mainly owing to the large rainfall at the end of 1859 and during the early portion of 1860, and to the frequent agitation and consequent increased exposure of the water to the action of the air by long prevailing gales.

D. F. C.

ART. XXIV.—*A Review of Dr. Otis Frederick Manson's Essay on Malarial Pneumonia.* By W. T. HOWARD, M. D. North Carolina Medical Journal, February and October, 1859, and January and March, 1860.

THE Essay referred to in the title was presented to the Medical Society of the State of North Carolina, and published in their Transactions for 1857. It is, we regret to say, more distinguished for its imaginative diction than for the correctness of its phraseology, the completeness of its original observation, or the acquaintance which it displays with the literature of the subject it professes to discuss. Dr. M. is persuaded that "Malarial Pneumonia" would have been discovered long ago, if Southern physicians in the United States had only observed for themselves, instead of pinning their faith upon treatises published in heretical France, England, and Italy; and Dr. Cartwright, of New Orleans, as recently as May of the present year, in a letter to Dr. Manson, congratulates him on North Carolina's "taking the lead in freeing the South from its worse than colonial vassalage to European and Northern medical authority."

It would seem that these gentlemen, and others who applaud them, and disseminate their opinions in print, must have remained strangely ignorant or unobservant of what every one else is acquainted with. One would have supposed that the complete elucidation of the influence of malaria upon the type of pneumonia, published by Dr. La Roche in the *Charleston Medical Journal* for 1853, and in his work on the same subject in 1854, would have left no doubt upon the mind of any one respecting the nature and degree of this influence; and yet, for aught that appears, the author of the Essay on "Malarial Pneumonia" was not even aware of the existence of Dr. La Roche's publications, nor of the numerous articles in which the same theme had been previously discussed by foreign and by American writers. To all who are equally unfortunate, the papers of Dr. Howard, published in the same locality in which Dr. Manson's Essay appeared, must prove in the highest degree interesting and instructive; interesting from the admirable critical spirit which pervades them, and from which none of the errors of his opponent's thesis escape, and instructive from the complete analysis which they present of the descriptions, given by a large number of physicians, of this modified form of pneumonia, which we should have supposed to be a familiar one, to all whose field of practice lies in a malarious region.

The elaborate manner in which both Dr. La Roche and Dr. Howard have performed their self-imposed task, while it testifies to their learning, acuteness, and critical skill, seems, nevertheless, to savour of a Quixotic spirit. But if they have reduced the imaginary giant, which for a while terrified some of our confrères, to the proportions of a very familiar wind-mill, we cannot refuse their claims to the homage which the destroyers of giants and dragons received from their countrymen in times when such things were; for we doubt if any monster of them all could number half as many victims as mark the progress of a false doctrine applied to the practice of medicine.

Malarial pneumonia is neither more nor less than a pneumonia with whose phenomena those of a malarial fever are conjoined; the two affections may, as Grisolle expresses it, be developed simultaneously under the impression of the same exciting causes; or either may arise in the course of the other, although it is most usual for the malarial disease to occur in the course of the inflammation, precisely as it may do under the influence of any cause whatever, physical or mental, that diminishes the power of the system to resist or to prevent the germination of the malarial seeds.

Dr. Howard, after having examined in detail the phenomena which characterize the simple and also the complicated form of pneumonia, states them summarily as follows:—

"1. That in simple, and 'malarial pneumonia,' alike, the *invasion* is preceded by *prodromata* in a certain proportion of cases, attested by the phenomena of general febrile disturbance, or of pulmonary catarrh, varying in duration from one to several days before the appearance of any local symptom of the affection.

"2. That in simple, and 'malarial pneumonia,' alike, the onset is *sudden* in

the vast majority of cases, and heralded by a *chill*, usually of marked intensity, and of variable duration.

"3. That in simple, and 'malarial pneumonia,' alike, *pain in the side* follows close upon the *chill*, constitutes a prominent symptom, and is present in an immense majority of the cases.

"4. That in simple, and 'malarial pneumonia,' alike, *dyspnœa* and *cough* generally soon succeed the fever of reaction, and vary greatly in their intensity, without offering anything distinctive of the one from the other.

"5. That in simple, and 'malarial pneumonia,' alike, the *expectoration* presents great diversity in its character and appearance; but that the thin, slightly tenacious, bloody expectoration which Dr. Manson deems diagnostic of the 'malarial' form, is met with also in cases (chiefly of an asthenic type) presenting no indications whatever of a miasmatic element, and, on the other hand, is absent in many cases—much the larger number, according to our experience—in which this element is most conspicuous.

"6. That in simple, and 'malarial pneumonia,' alike, *cephalalgia* is a very frequent and prominent symptom.

"7. That in simple, and 'malarial pneumonia,' alike, *nausea* and the *vomiting* of bilious matters may occur; but that they are much oftener present, and much more prominent, in the 'malarial' form.

"8. That in simple, and 'malarial pneumonia,' alike, as they occur at the South, the *intestinal mucous membrane* evinces greater susceptibility to irritants than it usually exhibits in colder latitudes; but that this tendency is not peculiar to, or in any manner diagnostic of, a malarial diathesis.

"9. That in simple, and 'malarial pneumonia,' alike, convalescence is not usually announced by a particular kind of *inodorous stools*.

"10. That in simple, and 'malarial pneumonia,' alike, the character of the *febrile movement* may be evidently remittent; but that, generally, this character of the fever is much more marked in the latter, and constitutes its most prominent distinctive feature.

"11. That in simple, and 'malarial pneumonia,' alike, the condition of the *pulse* depends upon the character of the disease, whether this be of sthenic or asthenic type; but that, at the present time, its character may be regarded as, usually, indicative of a *status* intermediate between the two. Yet, that, since the grade of inflammation is habitually less elevated in 'malarial,' than in ordinary simple pneumonia, the pulse, in the former, generally betokens a diathesis less exalted, without offering, however, anything specially diagnostic of a miasmatic element, inasmuch as, in *typhoid* pneumonia, *par excellence*, the pulse is soft and compressible almost always.

"12. That in simple, and 'malarial pneumonia,' alike, *delirium* is of frequent occurrence; but that, neither by the frequency of its occurrence, the time at which it appears, nor by its character, does it offer any special indication of the 'malarial' form. Indeed, so far does its supervention late in the career of this variety of pneumonia fall short of constituting one of its diagnostic features, as Dr. Manson has affirmed, that Trousseau represents it to be of habitual occurrence in fatal cases of pneumonia; for, says he, in speaking of a case that terminated unfortunately—'I need not add that the man was *delirious* during the last two days of his life, which is *always the case when death is inevitable from inflammation of the parenchyma of the lungs*.'[1]

"13. That in simple, and 'malarial pneumonia,' alike, *relapses* are not very infrequent during some period of convalescence.

"14. That in simple, and 'malarial pneumonia,' alike, the disease is characterized by well-defined *physical signs*, in the immense majority of cases; and that there is no satisfactory evidence that, in this respect, they offer any essential difference.

"15. That in simple, and 'malarial pneumonia,' alike, *post-mortem* examinations show that the inflammation almost always presents the *lobar* form—ordinary *lobar pneumonitis*—characterized by the usual products of the inflammatory process, when seated in the pulmonary parenchyma.

[1] Virginia Medical Journal, vol. x. 488.

"16. That in simple, and 'malarial pneumonia,' alike, the disease is most common during the colder months of the year, and, in the majority of instances, is referable to *causes* connected with the action of cold and atmospheric vicissitudes; these, when they operate upon constitutions previously impressed by malaria, arousing into activity that latent poison, and producing the complicated disease under consideration; but that, in both varieties of pneumonia, the disease is sometimes observed, when it is impossible to trace it to any evident exciting cause.

"17. Lastly, that this complicated disease has been described by many authors, both ancient and modern, and has been clearly set forth in the writings of those of recent date, and of easy access; so that no physician can justly plead ignorance of it on the score that it 'has not attracted the attention of recent investigators, and is only cursorily and imperfectly noticed by any of the modern standard authorities,' as Dr. Manson has so bluntly affirmed."

It would lead us too far to notice all of the interesting points presented in this Review; we can only further allude to the excellent account which it contains of the treatment of malarial pneumonia by bark and its preparations, which, as we are reminded, is almost as old as the use of bark for periodical fevers themselves. The medicine will not cure the pneumonic inflammation, but it will remove one of the most serious obstacles to its cure.

That such narrow and ill-founded notions as those which Dr. Howard has thought it worth his while to refute, should not only be entertained by a private individual, but, to some extent also, should be countenanced by his brethren, only shows how necessary it is that we should endeavour to attain to that all-embracing view which recognizes in man the same essential qualities and susceptibilities whatever zone he inhabits, and whatever variety of the human race he belongs to. It shows us that we should follow the traditions of our art (whose greatest teachers have been generally those who travelled most), and that, thus enlightened and fortified by the instructions of men richly furnished with knowledge, we should address ourselves to the task of modifying our therapeutical rules according to the race, sex, age, habits, &c., of each patient, and the climatic, endemic, or epidemic influences which mould the type of his disease.

A. S.

ART. XXV.—*The Principles and Practice of Modern Surgery.* By ROBERT DRUITT, Licentiate of the Royal College of Physicians, London; Fellow of the Royal Medical and Chirurgical Society, of the Medical Society of London, &c. &c. A new revised American, from the eighth enlarged and improved London edition, with four hundred and thirty-two illustrations. Philadelphia: Blanchard & Lea, 1860. Octavo, pp. 695.

THIS work of Mr. Druitt is decidedly an exceptional one; compendiums and vade-mecums, being generally catch-penny publications. As a class, such works have always been viewed with little favour in this Journal. But in Mr. Druitt's book, though containing only some seven hundred pages, both the principles and the practice of surgery are treated, and so clearly and perspicuously, as to elucidate every important topic. The fact that twelve editions have already been called for, in these days of active competition, would of itself show it to possess marked superiority. We have examined the book most thoroughly, and can say that this success is well merited.

One cause of the superiority of this system of surgery arises, probably, from the fact that it was first written when the author was still a student, before he had his own particular experience to relate, and was willing and desirous of writing down simply the principles and practice of general experience, that is, the experience "formed by placing together the discoveries and observations transmitted to us by a multitude of practitioners who have lived at divers times and in divers countries." The experience of any one man can be, as the distinguished writer from whom we have just quoted, expresses it, but "a mere point,"

in comparison to this general experience.[1] Surgery, its science and art, is far too extensive, and comprises far too much, for personal experience to avail in obtaining a knowledge of it, no matter how long and how devotedly one may labour; and the more private experience is thrust before this general experience, in attempting to instruct others, the less value would we place upon the teaching. Under certain circumstances, on one or two subjects, the personal experience of a surgeon may have considerable weight; but this is as far as can be conceded; and a work, treating of the whole subject of surgery, can only be valued from being a faithful exponent of general surgical experience, of the principles and practice that have been sanctioned and preferred by numbers of eminent men.

Mr. Druitt's book may be considered as setting forth correctly this general surgical experience of which we have spoken, and as faithfully representing the condition of the art and science of surgery, at the present time; and this, in a work of the kind, is the highest praise that can be bestowed.

His book, moreover, possesses the inestimable advantages of having the subjects perfectly well arranged and classified, and of being written in a style at once clear and succinct. The advantage of a good classification can only be appreciated by witnessing the inconveniences of a bad one. We know a work in which staphyloma and polypus are placed together as *excrescences;* another, where stricture of the urethra, accouchement, and cataract, are all in the same class as *obstructions;* and even Delpech has placed trichiasis and club-foot together, under the head of *deviations*, and hernia and dislocation of a limb in the same chapter, entitled *displacements.* The disadvantages of a diffuse and inflated style are still greater than those of awkward classification, of which examples have just been cited. To make a medical comparison, such a style has, in a book, the same effect that general dropsy has in the body.

Another great advantage of Mr. Druitt's book, particularly of the present American edition, is the fulness and the excellence of its illustrations. It is impossible to overrate the increased facilities thus afforded to the study of the more practical portions of the work. The appearance of the disease, the position of the operator, the instruments to be used, the course of incisions, and the application of the dressings can be comprehended at a glance.

Those acquainted with the last American edition of this work, will find it to have undergone, in the four editions it has since passed through in England, very considerable and important changes. It is the same book, but it has grown much stouter and stronger, so that it contains now one-third more matter, and nearly two hundred and fifty more illustrations than when last presented to the profession in this country. Some portions of the work have been entirely written afresh, in order to be strictly in accordance with the most recent improvements and discoveries. Among these may be indicated the chapter on Inflammation, and also that on Gunshot Wounds, the materials for which were afforded by Mr. George Lawson. The chapter on the Eye has been very considerably improved, under the revision of Mr. Haynes Walton, and now contains a very useful account of the use of the Ophthalmoscope. Among other subjects that have received special addition and improvement, must be mentioned the operations for excision of the joints; the radical cure of hernia; the treatment of anchylosis by forcible extension; ovariotomy; the treatment of vesico-vaginal fistula; and the administration of anæsthetics.

The surgeon under whose supervision this present edition has been passed through the press in this country, has made to it some few additions, called for principally by peculiarities and novelties in American practice. The recent publication, also, of a number of surgical treatises, Gross's System of Surgery; Toynbee on the Ear; Ashton on the Rectum; and, above all, the excellent work of Hamilton on Fractures and Dislocations, has enabled him to introduce a number of very valuable illustrations of recently invented instruments and

[1] "Cette expérience propre à chacun n'est qu'un point, en comparaison de l'expérience générale qui s'est formée par le Concours des Découvertes et des Observations qui nous ont été transmises par une multitude de Practiciens qui ont vêcu en différens tems et en différens lieux."—*Mém de l'Acad. Roy. de Chirurgie,* tom. iii. p. 6.

surgical procedures, and to add to the number of the bibliographical references, by which this work is enriched.

In the getting up of this volume, the publishers have made the best use of the great facilities at their command, and have omitted nothing in the way of paper, letter-press, or illustrations, which could add to its appearance or its usefulness.

W. F. A.

ART. XXVI.—*On the Theory and Practice of Midwifery.* By FLEETWOOD CHURCHILL, M. D., M. R. I. A. Professor of Midwifery, &c., in the King and Queen's College of Physicians in Ireland. With Additions by D. FRANCIS CONDIE, M. D., author of "A Practical Treatise on the Diseases of Children," &c. With one hundred and ninety-four Illustrations. A new American, from the Fourth corrected and enlarged London edition. Blanchard & Lea: 1860. 8vo. pp. 665.

AMONG the many systematic treatises we possess, on the theory and practice of midwifery, we know of no one better adapted for the use of both student and practitioner than that of Dr. Churchill. Presenting a full and faithful picture of the actual state of our knowledge in respect to every department of obstetrical science and art, its delineations, at the same time, are so direct and clear, that no one, who may have occasion to consult its pages, can fail to acquire the information he desires, and in a form the most exact and satisfactory.

The former editions of the work have been received in Europe and this country with the most marked approbation, and to an equally if not more favourable reception the reprint before us, considered in reference solely to the original text, presents even stronger claims than its predecessors—from its greater fulness, and the careful revision every section has undergone, with the intent to render it a faithful exponent of the important branch it professes to teach.

The account given in the chapter on puerperal fever, of a gastro-enteric fever to which puerperal females are liable, is deserving of an attentive study. The fever referred to is one of not unfrequent occurrence, and has been known, occasionally, to prevail as an epidemic. Although its course and termination are, in general, far more favourable than those of true puerperal fever, yet its occurrence is always alarming to the patient, and if its true character be not well understood, and its diagnosis, at once, correctly made out, it is liable to create unnecessary anxiety in the mind of the practitioner—or even to lead him to the adoption of an improper course of treatment.

The chapter of Dr. Churchill on sudden and unexpected death subsequent to delivery in cases where this has been natural and apparently altogether favourable, is a valuable and instructive one. It is only recently that this subject has received the close attention its importance demands. Even still it is enveloped in not a little obscurity—so as to render it scarcely possible to give anything like a complete and satisfactory history of it. In addition to a few of his own, Dr. C. has collected the several observations in relation to it on record; these he has classified, as far as practicable, and appended such practical deductions and suggestions as they would seem to warrant.

It is only when the present is compared with preceding editions that any clear conception can be had of the rapid growth and vast improvement the work has undergone under the careful supervision of the author. From, at first, a meagre outline, to one, now, of the most comprehensive treatises we possess on obstetrics as a science and an art. A treatise from which but little is omitted that is adapted to throw light upon the true principles of midwifery, or which, as practical precepts, have received the sanction of the best and latest authorities. While, at the same time, the clearness, candour, and precision which characterize all its teachings; the fulness of its statistics on every subject it embraces, in relation to which statistics can be considered of any real value, and the copiousness and accuracy of its references to recent standard authors in whose writings the subjects discussed can be more fully discussed if desired, render it valuable as a text book for the use of the teacher, and as a manual for young practitioners.

A chapter on "Obstetric Morality" is appended to this edition, which, we are convinced, will be read with both pleasure and profit. It is a laboured defence of the morality of the operation of craniotomy in those cases in which alone it is justifiable—namely, where it is the only means which furnishes a chance by which the life of the mother may be saved, and where its omission would necessarily consign both her and her unborn offspring to certain death. The defence appeared originally in the *Dublin Quarterly Review*. Dr. Churchill declares that he is no advocate for the operation of craniotomy. In every case in which one or other is available, he would substitute either the forceps or the induction of premature labour. His only aim in the article which forms the appendix to the edition before us, is to present to "those who are now practising midwifery, and those who are preparing to practise it, the precise reasons for admitting or rejecting the operation" of craniotomy, and the basis on which is founded the right of the instructed and experienced obstetrician to perform it whenever he shall convince himself, after due deliberation, of the absolute necessity there exists for a resort to it.

The additions of the American Editor are numerous and pertinent, and well adapted to increase the interest and value of the work. A very considerable addition, we perceive, has been made to the pictorial illustrations of the text, while, in an appendix, copious extracts are given from a manual by Dr. Churchill on the qualifications and duties of monthly nurses. From these some valuable hints may be derived by the young practitioner, while in the hands of an intelligent nurse they would tend to increase her skill and consequent usefulness to both practitioner and patient.

ART. XXVII.—*On the Diseases, Injuries, and Malformations of the Rectum and Anus, with Remarks on Habitual Constipation.* By T. J. ASHTON, Surgeon to the Blenheim Dispensary, &c. &c. From the third and enlarged English edition, with illustrations. Philadelphia: Blanchard & Lea, 1860. 8vo. pp. 292, with appendix.

THE rapid exhaustion of two editions of this work, the flattering testimony of the profession, and the opinion expressed by the medical press of his own country, as well as by the Continental and American journals, are referred to by the author with very natural gratification, as sufficient evidence that his effort to direct the attention of the profession to the study and management of a very troublesome and badly comprehended class of diseases, has "not been unsuccessful." Our readers are doubtless already familiar with the reputation of Mr. Ashton's publication, as well as of its superior practical character and comprehensiveness, through the previous editions, the second of which we had occasion to notice to some extent two years ago. (See No. of this Journal for April, 1858, p. 487.) It was then unquestionably the fullest and most satisfactory treatise on the subject in the English language, if not in any other. The third edition is a considerable improvement on its predecessors. Although the "same arrangement of the contents is observed, and the same principles of treatment advocated, the soundness and correctness of which are confirmed by very considerable practical experience," the new volume "has been carefully revised," some parts have been condensed, others have been extended, additional cases have been described and old ones more briefly quoted, and "to render it more useful, illustrations have been added of the appearances presented in the several diseases."

In short, the work has been rendered more entirely independent and original, and certainly does great credit to the author, who has furnished us with an invaluable addition to our means of combating a most formidable and perplexing, as well as ever recurring, class of bodily afflictions.

The illustrations are admirable, although not numerous, and have been reproduced with perfect success in the American reprint. The printing and paper also of the latter are good, and the greater size of the page with a slight reduction in that of the type, have enabled the publishers to present the book to American readers in a very convenient form.

By placing this work within the reach of our brethren of this country, the publishers have conferred a material obligation upon the patients no less than the practitioners of the United States. E. H.

ART. XXVIII.—*A Guide to the Practical Study of Diseases of the Eye; with an Outline of their Medical and Operative Treatment.* By JAMES DIXON, F. R. C. S., Surgeon to the Royal London Ophthalmic Hospital, Moorfields, &c. First American, from the Second London Edition. Lindsay & Blakiston, Philadelphia, 1860. 12mo. pp. 425.

THE excellent work of Mr. Dixon is well known to many American readers. Although an instructive monitor to all classes of professional readers, so far as it goes, it is especially a book for beginners The author does not pretend to offer it in competition with the standard treatises, which, by the way, he takes particular care to urge upon the attention of his more advanced readers; nor does he profess to include the whole subject of ophthalmic medicine and surgery as in the compact, yet clear and comprehensive manual of Wharton Jones. His object, which is well expressed in the unpretending title of "Guide to the Practical Study," "Outline of Treatment," &c., is to direct the student in the close and often repeated observation of the various appearances presented by the tissues of the eye under different influences, by which alone a practical knowledge of ophthalmic disease and injury can be acquired. Having shown his readers what to look for in the affected organ, and how to recognize the delicate changes described as resulting from the injury or the morbid action, he provides them with such leading hints for treatment, as his own personal experience had led him to suggest.

In accordance with this plan, Mr. Dixon tells us that he has "chiefly dwelt on the description of *outward* phenomena; for, inasmuch as the peculiar susceptibility of a patient must cause endless modifications of his *subjective* symptoms, a full consideration of these would have expanded my volume from its present moderate dimensions, into a system of ophthalmic pathology."

The volume, therefore, is to be regarded as an introductory manual, which by teaching the reader "*how to learn*," and by urging him to study ophthalmic disorders, where alone their features can become familiar, in the living subject, may prepare him to refer with more interest and advantage to the larger works which are indispensable to the more advanced practitioner.

Mr. Dixon tells us that he "has endeavoured to describe accurately and simply, the appearances of the various tissues of the eye, both in health and disease; and, after twelve years of official duty at the most numerously attended ophthalmic hospital in existence, I need hardly add that every description has been drawn from nature." Nor does he forget, "while attempting to sketch all the principal diseases of the eye," to spare his readers the infliction of the many uncouth and needless terms with which the Greek terminology of the German ophthalmologists has been too often allowed to disfigure our English and American text-books, to the dismay and disgust of the unsophisticated reader who may be so unfortunate as to have no practical acquaintance with the very simple forms of disease which are rendered so repulsive in these barbarous cognomina. "As it is my object," continues Mr. Dixon, in his preface to the first edition, "to speak of diseases as I have *seen* them, without entering upon theoretical or controversial matters, I have, as much as possible, avoided encumbering my text with literary references. Those which it appeared necessary to make are, for the most part, taken from works easily attainable by English students.

"In respect of treatment, I have endeavoured to limit myself to general rules, and briefly and plainly to record what my own experience has led me to prefer. Most gladly would I have avoided all criticism on the opinions of others; but this, in some few instances, when particular methods of treatment have acquired celebrity, was impossible; for, under such circumstances, it seems as much the duty of a writer to offer warnings against a practice which he believes to be

dangerous, as to inculcate that which his own experience has taught him to consider safe and beneficial.

"In relating cases, I have restricted myself to such as seemed requisite to illustrate my subject. Occasionally it happens that to detail a well-marked case affords the best, and eventually the shortest method of describing the phenomena of a disease; and I have, therefore, in some instances, entered even minutely into such details. Those cases, however, which involve many technical points of operative surgery, I have placed separately in an appendix."

We make these quotations from the preface in order to show more clearly, and in the writer's own words, the scope and character of his work; and we do so more especially because, although we wish to introduce the book to the attention of our readers, and would cordially urge them to refer to it as one of the best of its class, it is hardly worth while, at this late day, to present anything more than a very cursory sketch of its contents. It should be said, however, that the present edition is a considerable improvement on the former in several respects. Although the author assures us that he has steadily kept in view his original plan, and endeavoured to correct and improve rather than to amplify, he has, nevertheless, added a good deal of valuable matter. Some of the chapters have been rearranged and considerably extended on certain subjects; and the section on the ophthalmoscopic appearances of the retina and choroid, has been re-written. We notice these improvements in many places throughout the work, and have been unusually interested in the progress towards completeness already made; so much, indeed, that we look forward in future editions, to a gradual growth into the dimensions as well as fulness of a systematic text-book, which shall render it quite as useful a guide to established practitioners as it now is one to students who are only preparing to engage in practice.

We do not mean to say that on most subjects of which it treats, Mr. Dixon's volume will not afford excellent and reliable advice in a very agreeable and often graphic manner, to those who are already far advanced in a practical knowledge of ophthalmic medicine and surgery. No one could fail to read many of its pages with advantage to his own experience and skill; but the greater his acquirement in these respects, the more desirous would he be to learn our author's views upon matters which the latter has not touched upon in his endeavour to keep within limits less discouraging to younger readers.

There are seventeen chapters and an appendix, the latter being occupied with a series of very interesting and instructive clinical cases.

The first fourteen chapters are devoted to the consideration of diseases and injuries of the different tissues and appendages of the eye and their treatment; the last three are occupied with the most important operations performed upon the eye, such as for Cataract in Chapter XV.; for Artificial Pupil, in Chapter XVI.; and for Staphyloma, Strabismus, Entropion, and Ectropion, Removal of the Eyeball, and the use of Chloroform in Ophthalmic Surgery, in Chapter XVII. Chapter I. treats briefly but very clearly, of the Examination of the Eye. The Conjunctiva, in health and in all of its diseased conditions, is considered in Chapter II., and the Abnormal States of the Sub-conjunctival Tissue, in Chapter III. The Cornea, the Sclerotic, the Iris, the Choroid and Retina, the Vitreous Body, the Lens and Capsule, Diseases which involve all the Tissues of the Eyeball (Glaucoma, Scrofulous, Encephaloid, and Melanotic Deposit), Diseases of Uncertain Seat, the Lachrymal Apparatus, the Eyelids, and the Orbit, are the topics of the succeeding eleven chapters, in the order of succession here enumerated.

In the course of these chapters we have met with a great deal that must prove especially useful in a work which, as one of favourite resort, is destined to exert an important influence on the rising and future generation of medical practitioners for some time to come; and although, as already intimated, we should have been glad to meet with a fuller discussion of some important points of practice, we have found very little to reject as not in accordance with the general experience of this country, while there is evidently much that will be cordially agreed to by every ophthalmologist of standing in Great Britain and America. It would be easy to protract this notice by referring to different passages in which certain peculiar views are expressed which have already been objected to by good authorities, to others containing results which are now established although comparatively new,

and to a third class in which he successfully controverts some recent heresies in continental practice. As our object is not to review but to recommend the volume as a desirable one to students, we prefer to direct our readers to its pages for more particular information, with the confident assurance that they will rarely be disappointed in their appeals to it as a reliable guide to the practical study of the diseases of the eye. E. H.

ART. XXIX.—*Cuba for Invalids.* By R. W. GIBBES, M. D., Columbia, S. C. New York: W. A. Townsend & Company, 1860. 12mo. pp. 214.

THIS little work affords a very pleasing sketch of travel in Cuba, and supplies a good many items of information not to be found in more pretentious volumes; its strictly medical portion is introduced, as it were, by way of parenthesis, for the sake of urging the value of a climate mild enough and equable enough to allow of regular open air exercise in the treatment of tuberculous disease. Residents of New York, Boston, or Philadelphia, will read with a sort of envious incredulity of a place like Trinidad de Cuba, where the meteorological records of 13 years show a mean temperature of 80.1° Fahrenheit, the maximum 92°, and the minimum, *only once*, 56°.

A single obstacle stands in the way of the majority of consumptives who would act upon Dr. Gibbes's recommendation, and that is the great expense attending a residence in Cuba. Unfortunately, the *res angusta domi* is no preservative against the fell destroyer, and many a victim is sacrificed solely because his ransom is beyond his means. To those who are more favoured in their circumstances, Dr. Gibbes has rendered an essential service by calling special attention to the sanitary advantages of an island so long famed for its beauty and wealth, artificial as well as natural. J. H. P.

ART. XXX.—*Skin Diseases and their Remedies.* By ROBERT J. JORDAN, M. D., etc. London: John Churchill, 1860: 12mo. pp. 283.

DR. JORDAN was induced to prepare this excellent little work by the conviction that it would supply a want often felt by the profession; and we are only surprised that he was not long since anticipated in his undertaking. In this country especially, very few practitioners have opportunities for extensive observation and experience in regard to diseases of the skin, and hence a manual upon the subject will be likely to prove eminently serviceable.

An introductory essay upon the history of skin diseases in Europe, and their general etiology, relieves in some measure the dryness of this little volume, the style of which is necessarily extremely concise and matter-of-fact. Willan's classification, with some trifling modifications as regards its subordinate details, is adopted, on the very proper ground that it is the most practically useful in reference to diagnosis. A special chapter is devoted to the syphilidæ, and affections of the hair and nails are treated of separately in the concluding portion of the book.

We are surprised to note the introduction of typhus and typhoid or enteric fever among the exanthemata. The *mulberry rash* of typhus, and the *rose tache* of typhoid, are mere symptoms; the essential and distinctive lesions involved in those diseases are such as to completely remove them from the range of cutaneous disorders. Perhaps, however, this remark may seem hypercritical; and certainly the insertion of a subject where it does not strictly belong is better than the omission of anything which should be presented. We cordially recommend Dr. Jordan's manual to our readers, as a sort of guide among the intricacies of larger treatises; the student and the young practitioner especially will find it both convenient and reliable. J. H. P.

ART. XXXI.—*Memoir on the Salubrity of the Isle of Pines.* By Dr. DON JOSE DE LA LUZ HERNANDEZ, Physician and Surgeon of the Royal House of Beneficentia and Foundling Hospital, Member of the Inspection of studies of the Islands of Cuba and Porto Rica, etc. 8vo. pp. 56, Habana, 1857.

THE Isle of Pines, a small island of about one hundred and eighty square leagues in extent, lies in the Caribbean Sea some thirty leagues south of the island of Cuba. It was for a long period reputed to be a place of no account, infested with ferocious crocodiles and annoying and pernicious insects, fitted in fact, only as the haunt of wreckers, pirates and malefactors. It has, however, of late years attracted the attention of Drs. Piña, Hernandez and a few others who, from their own personal investigations, speak in high praise of the salubrity of its climate and the remedial qualities of its numerous mineral springs. The latter gentleman, especially, refers to numerous cases as falling under his own immediate notice, in which tuberculosis of the lungs, scrofula, chronic inflammations of the mucous membranes generally, gout, rheumatism, asthma, paralysis, ophthalmia, otitis, cystitis, epilepsy, and various nervous, uterine and cutaneous affections had been either very materially benefited or entirely cured by a prolonged residence upon the island, and a properly regulated use of its mineral waters, internally and externally.

The Isle of Pines is described by Dr. Hernandez as one of peculiar beauty—possessing a soft, dry, and balmy atmosphere; a clear and beautiful sky, an equable temperature, and the most agreeable prospects. In all directions are seen crystalline brooks of cool, pure, delicious water—meadows enamelled with brilliant flowers of every hue, or woods of gigantic pines, whose thread-like foliage, agitated by the gentle breeze, utters continually a grateful and soothing murmur. If the eye is raised from the many pleasing objects which close at hand abound, and is directed to the distance, it rests upon the steep slope of some commanding eminence, or the peak of one or other of the mountains that occur in nearly every portion of the island, separated by intervening valleys rich in flowers and verdure.

The island rests upon a rocky base, the nucleus of which, in its western sections, consists of granite, granitic marble, and even pure marble. The valleys are covered with or formed in a bed of carboniferous earth, upon the surface of which sparkles a light stratum of ferruginous and silicious sand. In the eastern portion of the island there occurs a calcareous uranitic rock of plutonic origin, produced rather by condensation than by sedimentation, differing widely from the argillaceous and arenaceous or the calcareous lands prevalent in all the western portion of the island of Cuba.

The mineral waters, of which springs abound in most parts of the island, are impregnated with oxygen, and carbonic acid gases, chloride of sodium, sulphate of lime, carbonate of lime, iron, magnesia, chloride of calcium, nitrate of lime, silex, and extractive organic matter. The temperature of these waters is usually about 82° of Fahrenheit's scale.

The Isle of Pines has a fine port, which, if encouragement were held out to induce an emigration to its rich and fertile valleys, of an industrious and enterprising population, would secure for the island a large and profitable commerce with the neighbouring coast of Mexico.

A place so admirably situated as is this little island, possessing so many attractions as a residence for the healthy, and which holds out such strong inducements to the sick and the valetudinarian to seek there for a renewal of health and strength, must, as our author predicts, soon emerge from the state of neglect and contempt to which it appears to have been so long unjustly condemned, and secure for it the necessary care of the government. D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Deglutition of Alimentary Fluids.*—Prof. J. H. Corbett, M. D., in a paper read before the Physiological Subsection of the British Association for the Advancement of Science, at its recent meeting in Oxford, endeavoured to prove that there are two distinct forms of deglutition; that, while the alimentary bolus is propelled with rapidity over the epiglottis, fluids can flow in two streams, one at each side of the epiglottis and of the aryteno-epiglottic folds, without the danger incidental to its passage over the central aperture of the larynx. This occurs in the infant and mammal during suction; it takes place in the sipping of fluids, swallowing of the saliva, and during drinking in a continuous draught. Ordinary drinking is accomplished by gentle muscular movements, which should not be confounded with the gulping of fluids. In gulping, the fluid is rapidly and forcibly propelled backwards, and this act somewhat resembles the deglutition of solids.

In experiments made by the author on the dead body, fluid poured upon the dorsum of the tongue passes backwards into the pharynx in two streams, through the grooved passages situated at each side of the epiglottis and aryteno-epiglottic folds.

In the living body, during the deglutition of fluids, the uvula falls forwards upon the tongue, in front of the epiglottis; and both the uvula and epiglottis afford protection to the respiratory apparatus. The fluid is divided by the uvula into two currents, which descend at each side, under the half-arches of the palate; that such is the principal use of the uvula. The anatomical arrangements in the human body are perfectly adequate for the transmission of fluid in this safe manner. The anatomy of the porpoise, in which the larynx rises in the form of a blow-tube for several inches above the level of the tongue, affords a strong confirmation of this view; which is further sustained by instances in which the epiglottis has been destroyed. The distinctness of the two forms of deglutition is also indicated by the fact that the mouth may be filled with food, and yet drink can be swallowed without displacement of the solid aliment.—*Brit. Med. Journ.*, July 21, 1860.

2. *Coloration of the Bones of the Fœtus, by the Action of Madder mixed in the Food of the Mother.* By M. Flourens.—Twenty years ago, I presented to the Academy (3d Feb., 1840) two or three skeletons of pigeons, reddened by the action of madder, which had been mixed for a certain time with the food of those animals. The last experiments of this kind, made in France, were by Duhamel in 1739, just a century before mine. The experiments of Duhamel were almost forgotten, mine were received with curiosity by physiologists.

At the meeting of the Academy on Feb. 24, 1840, passing from my observations on birds to those of mammals, I presented to the Academy the skeletons of two or three puny pigs whose bones and teeth were completely reddened by the action of madder mixed with the food.

To-day I present to the Academy a fact much more curious, and as I believe, quite new. Not merely are the bones of the animal itself nourished with madder, but those of the fœtus also are reddened, and of much deeper colour, by the single circumstance that the mother has been submitted to a diet mixed with madder during the last 45 days of gestation.

And not only have all the bones become red, but the teeth also, and what is remarkable, in a manner much more complete and uniform than when the fœtus being born, is itself submitted, so soon as it can eat, to the madder régime. So much greater permeability does the tissue of the embryo afford to the circulation of the blood of the mother. But it is only the bones and the teeth which become thus affected. Neither the periosteum, nor the cartilages, nor the tendons, nor the muscles, nor the stomach, nor the intestines, nothing, in a word, which is not bone, is thus coloured.

I can show to the academy three pieces which are three parts of the same skeleton.

The first is the right tibia. All the bone is red, but neither the periosteum, nor the cartilages is at all so.

The second piece is the left tibia, a shred of periosteum has been detached at one point, and it is seen to preserve its ordinary white colour.

The third piece is the rest of the skeleton. One may remark above all the teeth which are perfectly coloured.

The sow which gave me this fœtus produced five at the birth. Two were dead, and both were found equally coloured. Three others live, and we may judge by the colour of the teeth that of the rest of the skeleton.

The mother does not communicate directly or immediately with the interior of the fœtus except through the blood. Now, the connection of the blood of the mother with that of the fœtus, in whatever mode that may be, which I shall examine in another note, is a fact full of consequences.

How does the fœtus respire? How is it nourished? Evidently through the blood of the mother. All physiologists have also thought and said so. But does the blood of the mother communicate with that of the fœtus? Here is the whole question, and by the specimens which I bring before the Academy, one may see that it is resolved.

The blood of the mother communicates so fully with that of the fœtus that the colouring principle of madder, the same principle which colours the bones of the mother, colours also the bones of the fœtus.—*Gazette Médicale de Paris*, 16 June, 1860.

[M. Flourens seems to be entirely ignorant of the experiments of our countryman, the venerable Prof. R. D. Mussey, made upwards of thirty years ago, and published in the number of this journal for November, 1829, p. 20 (vol. v.).

Dr. M. caused a sow, during the last eight weeks of gestation, to be fed with madder by mixing it with the food of the animal. The day the farrow was produced several of the pigs were killed, and their bones inspected. "Every bone was strongly tinged with red. *The teeth were stained of a delicate pink colour.*"

This paper is accompanied with a coloured plate, representing the appearances of the teeth and of the thigh bone.

It will be perceived that M. Flourens has been completely anticipated in his discovery by Professor Mussey, and that he is mistaken in supposing it to be "quite new."]

MATERIA MEDICA AND PHARMACY.

3. *The Action of Tea and Alcohol contrasted.*—Dr. EDWARD SMITH read a paper on this subject before the British Association for the advancement of science at its late meeting at Oxford. The object which the author had in view

was to express in a decided manner the action of these two great classes of substances, in order that their suitability in health and disease might be explained, and data given upon which those may argue who advocate a course opposed to the temperance movement. His observations were based upon his own experiments, which have already appeared in the *Philosophical Transactions* for 1859.

He showed, in reference to tea, that it excites all vital transformations; and whilst it increases the frequency, depth, and chemical changes of respiration, it at the same time increases the action of the skin, as shown by the increase of perspiration. Hence it promotes the transformation of food and tissue, and at the same time cools the body. Fat and acids lessen or prevent this action on the skin, whilst alkalies increase it. From such facts he deduced the conditions of system, season, and climate to which tea is applicable, and showed how far such deductions from science correspond with the actual instructive practice of mankind. He showed that it was not applicable in the absence of food, but only when the system was replete with food. It was not fitted for breakfast, nor for those of spare and active habits, nor to certain exertion, nor for those who perspire too freely, nor for prisoners, nor for the ill-fed and the destitute, nor for the young. It was the most fitted for the old, the corpulent, the sedentary, for some forms of deficient accumulation, for soldiers, for hot climates and seasons, unless at the period when, even in these conditions, the skin is too active, and for all conditions in which there is excess of food in relation either to the necessity for it, or to the power to transform it. It is especially fitted to aid in the transformation of starch and fat foods.

He then showed in what respect the action of coffee differs from that of tea, viz., in lessening the action of the skin, and thereby preventing the waste of heat; lessening the necessity for the transformation of food, by acting upon the kidneys, and sometimes upon the bowels. The conditions under which coffee should be taken are therefore very different from those in which tea is applicable, and in practice we do recognize this difference. Coffee lessens the consumption of food, whilst tea increases it; because the former conserves the heat of the body, and the latter disperses it.

The subject of alcohols was fully discussed, and it was shown that the class ought to be broken up, since the members of it contain very different amounts of alcohol; and beers, if not wines, exert their principal action by the elements apart from the alcohol. The author showed that rum acts differently from brandy and gin, and is a true restorative. He stated that there are no points of similarity between the actions of tea and spirits, and that the latter were useful in conditions quite opposed to those in which tea is required, viz., where it is desired to lessen the action of the skin, and at the same time to sustain the action of the heart. In these respects, spirits exert a powerful influence; but in a normal condition, in health, all the evidences of their action show that they are poisons and not foods.

Beers he thought to be valuable according to the amount of gluten, sugar, acids, and salts, which they contain, and hence that the good old-fashioned English ales, made of malt and hops, are of infinitely greater value than the thin bitter trash which has become so fashionable under the name of pale or bitter beer. The action which is of real value is the power which genuine ale has, by its gluten and sugar, to promote the transformation of food, as shown by the author's experiments; and thereby the interesting fact was made out, that in this important respect tea and good beer have an analogous action, and hence that there is truth on both sides of the temperance question. Ales, however, have a greater affinity to coffee than to tea, since they lessen the action of the skin, and at the same time they increase the action of the heart. They are also fitted to certain exertions in a far higher degree than tea, and indeed in many respects they are suited to different conditions. The author reprobated the introduction of ales into India, believing that, from their power to lessen the action of the skin, the conditions under which they would be useful are very exceptional. If, however, they withdrew the soldier from the temptations of the raw spirit named arrack, they would be of some service.—*British Med. Journ.*, July 14, 1860.

4. *The Dietetic and Medicinal Properties of Coca.*—The *Erythroxylon Coca*, a plant which grows in moist and woody regions on the eastern slopes of the Andes, is highly valued by the inhabitants of Peru, Chili, and Bolivia, not only as a medicine, but also as an article of food; and serves with them as a substitute for the tea, coffee, betel, tobacco, haschisch, and opium used by other nations. Its culture, upon which, since the time of Pizarro's conquest, much care has been bestowed, has recently increased to such a degree, that in the year 1856 the revenue of the Republic of Bolivia, from the sale of this herb, amounted to thirteen million of francs—a very large sum, if compared with the small number of consumers (800,000). According to the account of M. Pöppig, and of other well-known travellers, the natives use the dried leaves of the coca plant either by themselves or in combination with a highly alkaline substance called *llipta*, which is prepared from roasted potatoes and the ashes of different other plants; they masticate them like the Malays and the inhabitants of the Indian Archipelago do the calcined leaves of the clavica betel. The use of this masticatory, which is considered a great delicacy, is not, however, confined to the rich; on the contrary, it is particularly among the hard-working Indians that the coca enjoys a high reputation as a nutriment and restorative, and its use is considered absolutely essential for the endurance of fatigue and exertion, so that a labourer in making his contract has a view not only to wages, but to the amount of coca to be furnished. The Inca, who lives at a height of seven to fifteen thousand feet above the level of the sea, and whose meagre fare consists principally of maize, some dried meat, and potatoes of bad quality, believes that he can sustain his strength solely by the use of coca; the porter who carries the mail, and accompanies the traveller over the roughest roads at the quick pace of the mule, invigorates and strengthens himself by chewing coca; the Indian who works half naked in the silver and quicksilver mines, looks upon this plant as an ambrosia capable of imparting new life, and of stimulating to new exertions. It is not surprising, under such circumstances, that this article should be very much abused, and that the evil of intemperance in the use of coca, known as coquear, should be quite as prevailing among the natives of those districts as intemperance in the use of tobacco, alcoholic liquors, and opium is among other nations. They often intoxicate themselves for several weeks, hide in the deepest forests in order not to be disturbed in their enjoyment, and not rarely return home to their family suffering from delirium or decided idiocy.

The child and the feeble old man seize with equal eagerness the leaves of the wonderful herb, and find in it indemnification for all suffering and misery. Be it that the praised efficacy of the plant is merely the effect of fancy or tradition, or that the plant really contains a powerful principle unknown to science, the solution of this mystery is certainly a worthy theme for scientific inquiry, and the investigations of Dr. MANTEGAZZA deserve, therefore, our full attention.

Dr. Mantegazza observed that the chewing of a drachm of the leaves of the coca increased salivation, giving at first a somewhat bitter, and afterwards an aromatic taste in the mouth, and a feeling of comfort in the stomach, as after a frugal meal eaten with good appetite. After a second and third dose, a slight burning sensation in the mouth and pharynx, and an increase of thirst, were noticed; digestion seemed to be more rapidly performed, and the feces lost their stercoraceous smell, the peculiar odour of the juice of the coca becoming perceptible in them. On using the coca for several days, the author observed on himself as well as on other individuals a circumscribed erythema, an eruption around the eyelids resembling pityriasis; from time to time a not unpleasant pricking and itching of the skin was felt. An infusion of the leaves, taken internally, was found to increase the frequency of the pulse in a considerable degree. In making observations on the frequency of the pulse, the author was very careful to consider all the conditions which might influence it; he found that the temperature of the air being the same, and the liquids being heated to an equal degree, an infusion of coca will increase the action of the heart four times its normal standard, while cocoa, tea, coffee, and warm water only double it. By taking an infusion prepared from three drachms of the leaves a feverish condition was produced, with increased heat of the skin, palpitation of the heart, seeing of flashes, headache, and vertigo; the pulse rose from seventy to one hundred and thirty-four.

A peculiar roaring noise in the ear, a desire to run about at large, and an apparent enlargement of the intellectual horizon indicated that the specific influence upon the brain had commenced. A peculiar, hardly describable feeling of increased strength, agility, and impulse to exertion follows; it is the first symptom of the intoxication, which is, however, quite different from the exaltation produced by alcoholics. While the latter manifests itself by increased but irregular action of the muscles, the individual intoxicated by coca feels but a gradually augmented vigour, and a desire to spend this newly-acquired strength in active labour. After some time the intellectual sphere participates in this general exaltation, while the sensibility seems to be hardly influenced; the effect is thus quite different from that produced by coffee, and resembles in some degree that of opium. Dr. Mantegazza could, in this excited condition, write with ease and regularity. After he had taken four drachms he was seized with the peculiar feeling of being isolated from the external world, and with an irresistible inclination to gymnastic exercise, so that he who in his normal condition carefully avoided the latter, jumped with ease upon the writing-table without breaking the lamp or other objects upon it. After this a state of torpidity came on, accompanied by a feeling of intense comfort—consciousness being all the time perfectly clear—and by an instinctive wish not to move a limb during the whole day, not even a finger. During this sensation sleeps sets in, attended by odd and rapidly changing dreams; it may last a whole day without leaving a feeling of debility or indisposition of any kind. The author increased the dose to eighteen drachms in one day; his pulse rose in consequence of it to one hundred and thirty-four, and in the moment when delirium was most intense, he described his feelings to several of his colleagues, who observed him, in the following written words: "*Iddio è ingiusto perche ho fatto l' uomo incapace di poter vivere sempre cocheando*" (this is the expression for intoxication by coca). "*Io preferisco una vita di* 10 *anni con coca che un di* 1,000,000 *secoli senza coca.*" After three hours of sleep Dr. Mantegazza recovered completely from this intoxication, and could immediately follow his daily occupation without the least indisposition—on the contrary, even with unusual facility. He had abstained for forty hours from food of any kind, and the meals then taken were very well digested. From this fact, the author finds it explainable that the Indians employed as carriers of the mail are able to do without food for three to four days, provided they are sufficiently supplied with coca.

From these experiments made repeatedly on himself, and on other individuals, Dr. Mantegazza draws the following conclusions:—

1. The leaves of the coca, chewed or taken in a weak infusion, have a stimulating effect upon the nerves of the stomach, and thereby facilitate digestion very much. 2. In a large dose coca increases the animal heat and augments the frequency of the pulse, and consequently of respiration. 3. In a medium dose, three to four drachms, it excites the nervous system in such a manner that the movements of the muscles are made with greater ease—then it produces a calming effect. 4. Used in a large dose it causes delirium, hallucinations, and, finally, congestion of the brain.

The most prominent property of coca, which is hardly to be found in any other remedy, consists in the exalting effect it produces, calling out the power of the organism without leaving afterwards any sign of debility. The coca is in this respect one of the most powerful nervines and analeptics. These experiments, as well as the circumstance that the natives have used the coca, from the earliest period, as a remedy in dyspepsia, flatulency, and colic, have induced Dr. Mantegazza, and several of his colleagues in South America and Europe, to employ the leaves of the coca in a variety of cases, partly as masticatory, partly in powder, as infusion, as alcoholico-aqueous extract in the dose of ten to fifteen grains in pills, and as clyster. Dr. Mantegazza has used coca with most excellent results in dyspepsia, gastralgia, and enteralgia; he employed it not less frequently in cases of great debility following typhus fever, scurvy, anæmic conditions, etc., and in hysteria and hypochondriasis, even if the latter had increased to weariness of life. The coca might also be employed with great benefit in mental diseases where some physicians prescribe opium. Of its sedative effect in spinal irritation, idiopathic convulsions, nervous erethism, the author has fully convinced

himself. He proposes its use in the highest dose in cases of hydrophobia and tetanus. It is a popular opinion that the coca is a reliable aphrodisiac; the author has, however, observed only two cases in which a decided influence upon the sexual system was perceived.

Dr. Mantegazza, finally, recommends this remarkable plant, which could be easily introduced into trade, to the profession for further physiological and therapeutical experiments, and adds the full history of eighteen cases by which the medicinal virtues of the remedy are proved to satisfaction.—*Pharmaceutical Journal*, June, 1860, from *Œsterreichische für Praktische Heilkunde*, Nov. 1859.

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5. *Prophylamine, a New Remedy for Rheumatism.*—Dr. AWENARIUS, of St. Petersburg, is the first who has used this substance in medicine. In the space of two years, from 1854 to 1856, he has treated successfully more than 250 patients suffering from acute or chronic rheumatism. He affirms that pain and fever had in every case disappeared the day after the administration of the remedy.

He administered it in the following manner: Propylamine, 20 drops; distilled water, ℥vj. Add, if necessary, oleosaccharum of mentha piper. ʒij. Dose—a teaspoonful every other hour.

The employment of propylamine becoming more and more common in America, Mr. W. Procter has considered it necessary that apothecaries should study the properties of this substance and the mode of preparation. Propylamine was discovered by Wertheim in 1850. It can be artificially obtained by acting on the iodide of propylene with ammonia; naturally, by extracting it from the substances in which it is contained. It is met with in the flower of Cratœgus oxyacantha, in the fruits of Sorbus aucuparia, and in the Chenopodium vulgare; but it is in greatest abundance and most easily got in herring brine, where it is combined with an acid, from which it may be separated by distillation with potass.

It is a colourless, transparent liquid, with a strong ammoniacal odour. It dissolves in water; and presents, even in a weak solution, a strong alkaline reaction. It combines with acids, and forms crystallizable salts. Like ammonia, it produces white fumes when in contact with hydrochloric acid. Its composition is C^6H^9N, and is represented by one equivalent of propylene and one equivalent of ammonia, $C^6H^6 + NH^3$.

Propylamine is prepared by introducing into a retort a certain proportion of herring brine, with which a sufficient quantity of potass is mixed to render the liquid strongly alkaline; and adapting a condenser, containing very cold water, it is heated, and distillation continued so long as the liquid which passes exhales the odour of herring. The water of the condenser contains at once ammonia and propylamine, is saturated by hydrochloric acid, and evaporated to dryness at a mild heat. The crystalline mass is then dissolved, a solution of the hydrochlorate of propylamine is made, which leaves the hydrochlorate of ammonia. To extract the propylamine from its hydrochlorate, the solution is treated by hydrate of lime; but the greatest caution is necessary here to cool and condense the vapours, which are disengaged in great abundance even before the application of heat. If propylamine is to be extracted from the ergot of rye, it is necessary to prepare the extract of the substance known under the name of ergotine, and to mix with this solution an aqueous solution of caustic potass; the mixture should be distilled with caution, and received in a condenser containing water acidulated with hydrochloric acid.—*Edin. Med. Journ.*, June, 1860, from *Gaz. des Hôpitaux*, April, 1860.

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6. *Therapeutical Effects of Bromide of Potassium.*—Dr. PFEIFFER has confirmed by his researches the opinions of other physicians as to the sedative effects of bromide of potassium over the generative organs; he has found that the salt possesses a decided power of modifying abnormal erections and diminishing the frequency of seminal discharges. He has arrived at the conclusion that bromide of potassium exercises a special influence over the muscular part of the genito-urinary apparatus, and at the same time induces a characteristic modification of the secreting function of these organs. Dr. Pfeiffer has admin-

istered it also with success in neuralgia of the neck of the bladder. He commences with the dose of half a centigramme every day, and increases it gradually up to two or three grammes a day.—*Brit. & For. Med.-Chir. Rev.*, July, 1860, from *L'Union Médicale*, Aug. 30, 1859.

7. *On the Use of Sarsaparilla in Syphilitic Diseases.*—Prof. Sigmund, of Vienna, proposed to himself to examine the properties of sarsaparilla when used alone, and for this purpose he selected the best sarsaparilla root, and administered a portion of a freshly-made and strong decoction to the patients every day, their diet at the same time being carefully regulated. The only remarkable effect of the drug was a moderate excitement of diuresis, and occasionally a slight discharge from the bowels (which might perhaps be attributed to other causes), but no other disturbance of any organ or function could be discovered. The patients were from eighteen to forty years of age, were kept quiet in bed, at a uniform temperature, and were free from scrofulous or other wasting disease. The sarsaparilla was administered both in the primary and secondary forms of syphilitic disease, and the following is an abstract of the results: 1. *In simple recent gonorrhœa:* seven cases exhibited a cure in no case, nor was any one of them made worse; but the symptoms diminished as they would have done under any ordinary expectant treatment. 2. *In chronic gleet*, induced by swelling of the prostate gland and consecutive catarrh of the bladder: four cases exhibited no result whatever. 3. *In simple primary syphilitic sores:* nine cases were observed. The local treatment consisted in daily cleansing the sores, cauterization with nitrate of silver, or sulphate of copper, or corrosive sublimate, and dressings with weak solutions of the latter salt. The disappearance of the discharge, and the formation of a clean suppurating surface and gradual cicatrization, followed in six cases in precisely the same manner and at the same period as they would have done in the absence of all internal treatment. 4. *In indurated sores*, the existence of which had not dated beyond five weeks: there were 14 cases, and the local treatment consisted of daily cleansing, and dressings containing white or red precipitate, or iodine with iodide of potassium. There was a slow formation of scars, like flat, hard nodes, while the glands in the vicinity, as well as those at a greater distance, became hard and swollen, and in nine cases during the treatment spots developed themselves on the skin. 5. *In papular syphilitic eruptions, scattered over the skin:* four cases, which had been subjected to no medical treatment, were now treated continuously for thirty days, during which the original papules continued, and others more numerous were produced; here and there one of them shrivelled up and formed little scales upon the cuticle, and larger ones followed after. 6. *In papular syphilitic eruptions, grouped in circles or disks:* four cases had been previously treated with iodide of potassium for five or six weeks, and they were now treated for thirty days without any result. 7. *In secondary ulcers of the skin and in periostitis*, the use of sarsaparilla appeared to produce no effect in addition to that which might be attributed to local treatment with mercury or iodine.

Thus it seemed established that sarsaparilla, used by itself, does not exercise the slightest perceptible influence on the course and termination of syphilitic diseases, and Dr. Sigmund therefore ceased entirely to employ it alone in any form of syphilis.

Cases treated with German drinks, in which sarsaparilla is made to enter as an essential constituent, gave the following results, in the hands of Dr. Sigmund. The preparation employed was Zittmann's decoction, prepared according to the Prussian Pharmacopœia.

1. *In secondary syphilis*, the cases which had not been treated at all previously, exhibited no deviation from the ordinary course as long as the decoction alone was employed; upwards of a hundred such cases were observed. More than half of the patients bore the purgative effects very badly, and suffered from constant sleeplessness and obstinate discharge from the intestines, while some actually became emaciated.

2. *In secondary syphilis*, which had been previously treated by mercury or iodine, or both combined, but without success, and in which the cases presented relapses, papular or pustular eruptions, squamous affections, ulcers of the skin and

mucous membrane, disease of bones, &c.; in such cases, the use of the decoction alone generally diminished the symptoms, and its continued administration in certain instances effected a cure. In all such cases, copious discharges from the intestines and bladder and abundant perspiration were the immediate results of the treatment, and whenever these results failed to ensue, the cure was not effected. Since sarsaparilla employed alone does not produce the effects just described, the inference is, that the results must be attributed to the other ingredient present in the decoction, and therefore the sarsaparilla was omitted and a decoction prepared from the other constituents, and this latter afforded the same results under the same circumstances, even when the sarsaparilla was quite pure, and not mixed, as is often the case, with bardana, astragalus, inula, &c. The decoction of Zittmann is well known to contain a considerable quantity of antimony and mercury, and the operation of this preparation is accounted for by the presence of these minerals.

The conclusion to be drawn from the above cases is, that the use of sarsaparilla alone in gonorrhœal discharges, and in primary and secondary forms of syphilis, effects no material change, and that the activity of the decoctions which contain sarsaparilla cannot be referred to that root as one of their essential constituents.—*Brit. & For. Med.-Chir. Rev.*, July, 1860, from *Zeitschrift der Gesellschaft der Aerzte zu Wein*, Jan. 2, 1860.

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8. *Iodide of Ammonium in Constitutional Syphilis.*—M. GAMBERINI, of Bologna, has, from an experience of fourteen cases, arrived at the following conclusions regarding the use of iodide of ammonium in constitutional syphilis.

Iodide of ammonium is indicated in all cases where the iodides of potassium and sodium are employed, and produces a rapid cure. In syphilitic cases, the following results were obtained: five were cured in a fortnight, three in three weeks, five in a month, and one in five weeks. In the last case, the medicine was not well tolerated, and had to be given in small doses.

The dose is from two to sixteen grains daily; the last named quantity is but rarely required. Intolerance is an exceptional occurrence. Externally, iodide of ammonium has been usefully employed in frictions (three grains to an ounce of olive oil), in cases of nocturnal syphilitic pains of the muscles or joints.

Intolerance of the medicine is denoted by a burning sensation in the throat and heat in the stomach; these rapidly cease when the medicine is suspended for a day or two.

M. Gamberini states that he has removed, by means of iodide of ammonium, the indurations following the cicatrization of chancre, and the enlargements of inguinal glands. The other syphilitic affections in which he has employed it successfully, are, astralgia, rheumatic pains, periostoses, and enlargement of the cervical glands.

M. Gamberini states that iodide of ammonium possesses the following advantages over the analogous salt of sodium: 1. Its action in attaining the same therapeutic object is more rapid; 2. A much smaller dose is required.—*Bulletino delle Scienze Mediche;* and *Gazette Hebdomadaire*, June 1, 1860.

The conclusions at which M. Gamberini has arrived with respect to the iodide of ammonium agree very closely with those stated by Dr. Richardson in a communication to the Medical Society of London.—*British Medical Journal*, June 30, 1860.

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9. *Stearate of Iron.*—Dr. CALVI states, in the *Union Médicale*, for May 5th, that M. Ricord has successfully employed a plaster of stearate of iron as a dressing for phagedænic ulcers of the thighs in a syphilitic patient, which had resisted all previous treatment. A comparative trial was made with this preparation and coal tar; and the former was found to be by far the most efficacious.

Stearate of iron is made in the following way: Take of sulphate of iron, one part; soap, two parts. Dissolve the sulphate of iron and the soap in water separately. On adding the solutions to each other, a greenish-white precipitate is obtained; this is dried, and melted at a temperature of from 175° to 190°; essence of lavender (40 per cent.) is then added, and the whole is stirred until it cools. A plaster can be formed by gently melting it and spreading it on linen.

10. *Administration of Cod-Liver Oil with Bread.*—M. Bassie has invented a method of administering cod-liver oil with bread, which he calls, "huile de foie de morue panée," and which is prepared in the following manner: The bread is broken in pieces, and roasted at a moderate heat, and then thrown into a tinned vessel with some water, so as to obtain a decoction; it is then passed through a straining cloth under gentle pressure, and the strained liquid is exposed to a gentle heat until it has assumed a gelatinous consistence. White sugar and isinglass are then added, and the mixture is withdrawn from the fire and allowed to cool, when a little tartaric acid is carefully mixed with it. The bread jelly thus prepared is afterwards mixed with cod-liver oil, and flavoured with canella and essence of lemons. The white oil, and of the best quality, is to be preferred for this preparation.—*Brit. & For. Med.-Chir. Rev.*, July, 1860, from *L' Union Méd.*, June 15, 1859.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

11. *On the Intermittent Fevers of the West Indies, and on the Action of Quinia as a Specific in their Treatment.*—A paper, by Mr. Hugh Croskery, on this subject, was read before the Royal Medical and Chirurgical Society June 26th, 1860.

The object of the author in this communication was to point out the necessity of a sedative treatment during the hot stage, and free purgation before the administration of the specific. The mixture he had found most beneficial was composed as follows: Solution of acetate of ammonia, two ounces; spirit of nitrous ether, and spirit of juniper, of each half an ounce; potassio-tartrate of antimony, four grains; tincture of hyoscyamus, two drachms; tincture of opium, one drachm; to twelve ounces of camphor mixture. Of this a tablespoonful is given to an adult every half hour until diaphoresis comes on. The mixture may be either preceded or followed by ten grains of calomel, with a saline aperient a few hours later. He considered that the action of the mercurial purgative tended to assist the subsequent action of the quinia. He condemned the administration of quinine in large doses, and stated that he had obtained the most satisfactory results from its employment in small doses at repeated intervals. He believed that to administer it in any form during the paroxysm was injurious, and that the exhibition of large doses at this period of the disease was fraught with the greatest danger. The formula adopted by the author for its administration is the following: Disulphate of quinia, forty grains; tincture of oranges, half an ounce; dilute sulphuric acid, one drachm; to ten ounces of water. Of this mixture he gives to an adult a tablespoonful every hour during the intermission until singing in the ears or the presence of headache shows that the system is saturated by the remedy, when it is to be repeated at longer intervals, and even continued in small quantity for some days, so long as any unpleasant feelings are experienced at the time when the paroxysm ought to occur. He has found that in this manner from forty to sixty grains may be given before the recurrence of the attack, and that in the majority of instances the next paroxysm is either entirely prevented or is very much modified. One large dose of the salt very often produces disagreeable head symptoms, which prevent its repetition so as to get the system saturated with the remedy sufficiently early to obviate the return of the hot stage. In cases of severe quotidian he had occasionally given with benefit ten grains of quinine at once, along with the calomel; this, however, he considered rather as the exception. The paper concluded with the narration of five cases illustrative of the author's method of treatment. Of these cases, four were adults, and one a child nine years of age. In most of these the attack was quite recent, but in one case it had continued six weeks. The author remarked that in such circumstances the prolonged use of quinine during convalescence was essential to ultimate recovery.

12. *The Morbid Anatomy, Pathology, and Determining Cause of Emphysema of the Lungs.*—Some observations on this subject, by Mr. A. T. W. WATERS, were lately (June 26th, 1860) read before the Royal Medical and Chirurgical Society.

Although much has been written on the subject of pulmonary emphysema, there are yet many points in connection with it which require investigation. There is, perhaps, no disease the symptoms and physical signs of which are so readily explicable, from a knowledge of the structural changes by which it is accompanied, as this particular affection, and hence an acquaintance with the minute anatomy of the healthy lung-tissue becomes of the utmost importance, in order fully to appreciate the morbid changes which take place. (Here follows a brief description of the arrangement of the "ultimate pulmonary tissue.") Pulmonary emphysema is of two kinds—1. Interlobular emphysema. 2. Vesicular emphysema. The second, or vesicular, is by far the most important, and will be alone considered. It exists in three forms, differing only in the extent to which they involve the lung. 1. *Partial Lobular Emphysema*, involving a few air-sacs, or at most only a single lobulette. This is not often seen as an independent affection, but in lungs which are the seat of the second form it occasionally exists in small patches along the margins of the lobes. These patches resemble small vesicles, and when numerous have somewhat the appearance of a row of beads. 2. *Lobular Emphysema.*—This is the form most frequently met with. It involves one or more lobules in different parts of the lung, and is especially found along the margins of the base, the anterior border, and at the apex. It frequently exists in connection with phthisis, and occasionally with pneumonia. In this form it is easy to trace the divisions of the lung; the boundary walls of the lobules have not usually given way, and generally no interlobular emphysema exists. The air-sacs of a lobule are not necessarily all equally dilated, those at the circumference being most so. The emphysematous lobules may be seen projecting above the level of the lung, and in some instances they become developed into "appendages." 3. *Lobar Emphysema.*—This form involves the whole of a lobe, or an entire lung, or very frequently both lungs. It constitutes a very formidable affection, and often destroys life at an early period. The lung is much increased in size. The outlines of the lobules frequently cannot be distinctly seen, in consequence of the rupture of their boundary walls, and the production of interlobular emphysema. In investigating the morbid anatomy of emphysematous lungs, the same methods of preparation were used by the author as had been previously employed in the examination of the healthy organ—viz., injection, inflation, and desiccation. With regard to the structural changes which take place in the disease, we recognize, in the early stages, a simple dilatation of the air-sacs, and a diminution in the height of the alveolar partitions. A further dilatation takes place, with more or less complete obliteration of the alveolar septa. This distension produces a divergence of the elastic fibres of the air-sacs, and is soon followed by a perforation of the walls themselves, so as to give in the advanced stage a perfectly cribriform appearance to the membrane of which the walls are formed. This is followed by rupture of the elastic fibres, a further distension of the air-sacs, with a general breaking down of their walls, so that in the most advanced stages of the disease large cavities are found, traversed in all directions by membranous shreds or fibrous cords. The inner surface of the emphysematous lung-tissue presents the same microscopic appearances as that of the healthy tissue. In some lungs in which lobular emphysema existed, the air-sacs were found much distended, but no perforations existed; while in others, and especially where the disease was of the lobar kind, extensive perforations were found, with not more, and in some instances less, dilatation than in the former. This would seem to indicate some degeneration of tissue in the one case, which might be absent in the other. The condition of the bloodvessels explains the anæmic appearance of the emphysematous lung. In the earlier stages the capillaries of the pulmonary plexus are wider apart than in health; and as the walls of the air-sacs are perforated, and the latter more distended, the capillaries become ruptured and absorbed. The vascularity of the lung, in a condition of advanced emphysema, is very slight. The bronchial tubes are usually dilated in old-standing cases of emphysema,

their mucous membrane is pale, and there is increased development of the circular muscular fibres. An important question in connection with the emphysema is, whether the disease is preceded by, or attended with, any degeneration of tissue. With regard to the existence of fatty matter in the emphysematous lung, a considerable number of specimens were examined with great care; and although in one or two instances indications of its presence were found, as a rule it was entirely absent. Dr. Jenner has stated that a fibrous degeneration frequently exists. A number of specimens were examined to ascertain whether any alteration of this kind could be observed in the elastic fibres as compared with those of the healthy lung. The results arrived at on this point were imperfect, and the question is left for future investigation. Some kind of degeneration is believed in many cases to exist. With reference to the determining cause of pulmonary emphysema, the view that the disease is produced by expiratory efforts appears to the author the most tenable. Serious objections seem to present themselves to the theory advocated by Dr. Gairdner, that the disease results from increased distension, during inspiration, of one part of the lung, in order to fill the space previously occupied by a collapsed portion. During inspiration, the chest expands to make room for the dilating lung; air is drawn equally to all parts of the lung, and is not driven by any external force to one part more than to another. It is difficult, therefore, to understand how an excessive quantity of air should find its way to any particular portion. If the chest must reach a certain expansion, it would rather appear that the entire lung would be everywhere slightly dilated, except where collapsed: or else that those parts nearest the collapsed portions would be most distended. Such parts, however, are not the most frequent seats of emphysema. Further, the lungs can undergo very considerable distension without suffering any injury. Although the lungs undergo equable pressure during ordinary expiration, this by no means proves that such is the case during acts of coughing; in fact, the contrary is true, as has been shown by Dr. Jenner. The conformation of the walls of the chest, and of the lungs, seems to render it necessary that the latter should undergo unequal compression during violent expiratory efforts with a partially closed glottis, and that air should be driven first to those parts of the lungs where the walls are least resisting, and secondly to those portions which contain the least volume of air. The least resisting part of the thoracic walls is that which covers the apex of the lung; it consists of a membranous expansion, and plays no active part in the expiratory process. As a fact, we find, in coughing, that the lung bulges into the lower part of the neck. The parts of the lung which contain the least volume of air are the margins. These are out of the direct line of pressure which the lung undergoes in violent expiratory efforts, which are chiefly effected by the abdominal muscles, especially the recti. The contraction of these latter muscles, forcing upwards the abdominal viscera and the diaphragm, produces the greatest amount of compression at the base of each lung; the air is driven upwards in a strong current, which overcomes the current from the other portions, and these, instead of becoming emptied, remain forcibly distended. The phenomena witnessed in M. Groux, probably seen by many of the Fellows present, may be adduced in support of the view that during coughing the lungs become distended in any part where the walls of the chest offer but little resistance. Lastly, the cases recorded in a paper written by M. Guillot—in which what he describes as sub-pleural emphysema was found after death, preceded by long-continued and violent spasmodic cough—may be cited in favour of the expiratory theory of the production of the disease, a theory to which anatomical arrangement and physiological phenomena seem to point.—*Med. Times and Gaz.*, July 28, 1860.

13. *Treatment of Pneumonia by Veratria.*—In a work lately published, Prof. Vogt, of Berne, gives the results of his experience in the treatment of pneumonia by veratria. The number of cases treated from the beginning of 1857 to the end of March, 1859, was 56. Of these, 29 were cases treated in the first stage, 2 only being fatal. In the remaining 27 cases the properties of veratria were very strongly marked. On the fifth day of the disease the fever had generally disappeared, and the patients were becoming convalescent. Only in a small number of

cases, towards the fifth or sixth day, there was a fresh exacerbation, but all the phenomena disappeared more rapidly than before by a fresh administration or a larger dose of veratria. In no case had the veratria any other effect upon the local lesion than that of suspending its progress as soon as the febrile excitement was arrested. In a second class of cases there were 22 in which the disease had passed the first period and presented itself with a fresh exacerbation; of these, two died. Considering this treatment in a general manner, M. Vogt observes, that when applied to well-developed and serious cases of pneumonia, veratria has afforded very satisfactory results, as there were only 8 fatal cases out of 100; and his opinion is that the use of this drug ought not only to be ranked upon an equality with other approved methods of treatment, but that it is actually superior to them. The objection has been raised against the use of veratria that it often readily produces vomiting, and it has also been alleged that its action often becomes excessive. But M. Vogt does not consider these objections as having much weight; for as to its emetic powers, it possesses them in common with tartarized antimony, and ordinary experience proves the utility of vomiting in a number of affections of an inflammatory nature. As to the activity of its operation, it may be moderated by regulating the dose, and by carefully watching the effects produced, as in the case of other medicines. In small doses it has no action on the pulse, and in sufficient doses it never acts excessively, according to M. Vogt, when it is administered with suitable precautions. The rules laid down by M. Vogt are, to give the veratria in a rather large dose—namely, 5 milligrammes (a milligramme is .0154 of an English grain) every two or three hours, until the production of vomiting or the diminution of the pulse. The veratria is generally administered in pills; but some persons are unable to swallow pills, and the alkaloid must then be given in solution. The necessary dose for procuring the desired effect is from 25 to 30 milligrammes; but there are persons of less sensitive organization, principally men, in whom as much as 5 to 6 centigrammes (a centigramme is .1543 of an English grain) may be given in twenty-four hours. If the stomach is too irritable, the dose is reduced, and the veratria is administered in an effervescing draught or with a little opium; the action of the pulse is more slow in developing itself, but it is nevertheless observed at last.—*Brit. & For. Med.-Chir. Rev.*, July, 1860, from *Bull. Gén. de Thérap.*, Jan. 30, 1860.

14. *Idiopathic Glossitis.*—Dr. T. G. GEOGHEGAN relates (*Dublin Medical Press*, July 25, 1860) six cases of idiopathic glossitis as a contribution to the clinical history of this disease. The facts presented by these cases, Dr. G. observes, warrant the following inferences:—

"That the disease usually attacks young and previously healthy persons.

"That its immediate exciting cause is either exposure to wet and cold, or the presence of some local source of irritation in the organ, as a blister or excoriation, or the use of caustic applications, and that it is quite independent of the previous use of mercury. The much greater frequency of the disease in males, and the known injurious action of tobacco on the mouth, salivary and buccal glands, and on the fauces, together with the fact that cancer of the tongue not uncommonly attacks the inveterate smoker, renders it not improbable that the pestilent habit of smoking at least predisposes to this affection.

"That the disease is characterized by well-marked and urgent symptoms, which, if neglected, rapidly assume a formidable and even dangerous apect, their individual and collective nature being sufficiently attested by the details already given.

"That the inflammation usually attacks one side of the organ only (as noted by Graves), although the rest of the tongue may be swollen from serous infiltration and congestion.

"That abscess in the capsule of the sublingual gland or in the adjacent cellular structure, is a usual consequence of the disease. A purulent depot in the muscular substance of the tongue is less common.

"That complete recovery does not secure the patient from a second attack after a comparatively short interval, which may be more or less severe than the original one.

"That the disease requires to be met by prompt and decisive measures, of which the local are by far the more important.

"That local abstraction of blood by leeches applied directly to the tongue, and by incisions (particularly the former), is highly beneficial,[1] and should be resorted to without delay. Incision is further often requisite for the discharge of matter. When these measures (assisted by such constitutional means as each case may suggest) do not afford progressive relief, the formation of matter may be suspected, and should lead to a renewed careful examination of the tongue and its appendages in search of a depot, which, when discovered, should be evacuated. In making incisions on the dorsum, either as a means of abstracting blood or of discharging pus, care should be taken to keep the surfaces of the knife parallel to the median plane of the tongue, and not to direct its edge at all outwards. The incisions should be parallel to the raphe, and not transversely (as in an instance related by Graves), for obvious anatomical reasons. Emollient poultices beneath the jaw are useful; but the employment of mercury, as resorted to in a recorded case, is strongly to be deprecated as unnecessary if not injurious.

"When decided measures have been resorted to, the acute stage of the disease is short. The average duration of the cases here recorded, reckoned from the period of its full development to that of perfect convalescence, was five days. It will, no doubt, have been observed that in one of the cases under my care venesection was administered. This was the first example of the disease which had fallen under my notice, and probably the above measure might have been beneficially replaced by a larger use of leeches. The patient, however, was of plethoric habit, and had an excited circulation. In these days of sudden revulsions of opinion, and since brandy (divorced from its former unprofessional partner, common salt, and now happily united to beef tea) is accounted as a panacea, an apology is sometimes expected for the use of the lancet. If the practitioner is prudent, he will, however, in this, as in all other cases, use his discretion, 'nullius addictus jurare in verba magistri.'

"The affections with which acute idiopathic inflammation of the tongue is most liable to be confounded by an incautious observer are—acute cynanche tonsillaris, the severer forms of mercurial ptyalism, and a peculiar form of alveolar abscess, or aggravated gum-boil, which appears to me not to have been noticed by surgical authorities. The dysphagia, salivation, and fever of the first are common to it and to glossitis; the swelling, however, of the body and edges of the tongue in the latter, the infiltrated condition of the mucous crest beneath, and the altogether negative evidence afforded by the fauces, when visible, are sufficiently distinctive. If the surgeon cannot see the interior of the throat, he will be assisted by the prominence under the finger, and tenderness at the back of the dorsal aspect of the tongue, and sometimes beneath it, and by the swelling below the chin. As regards ptyalism, the condition of the gums and the evidence that mercury has not been administered (when forthcoming), and the local tenderness on pressure, are the most decisive. Abscess also, according to my experience, does not result from mercurial action, whilst ulceration is common. The distinction between mercurial and other affections of the mouth, based on an intrinsic character of the saliva, as proposed by Dr. Davidson, may possibly hereafter prove to be available in inflammation of the tongue. I have more than once verified the absence of indications of sulpho-cyanogen in the saliva in mercurial ptyalism. It remains, however, to be shown that certain diseases do not also cause suppression of that constituent. I regret that the matter escaped my recollection at the time the above cases were observed. It is a subject worthy of the notice of future inquirers.

"The alveolar abscess above noticed, to some extent simulates glossitis. This affection I have found to depend usually on a carious condition of the lower dens

[1] I find that leeching has been also insisted on by Dr. Graves. The late Sir Philip Crampton recommended the application of leeches directly to the fauces in cynanche; but the practice does not seem to have been extensively adopted. Numerous punctures of the tonsils, &c., rapidly made with the point of a bistoury, and followed by warm gargling, I have found to give relief in these affections.

sapientiæ, with acute periostitis of its root, more rarely on inflammation of the gum still covering this tooth at the time when its evolution has made some progress. The first named affection is very painful. In it, as in glossitis, there is difficulty in opening the mouth and in protruding the tongue, the mucous crest leading to the sublingual gland is equally swollen, red, and infiltrated, there is difficulty of swallowing and flow of saliva from the mouth, with pain and tenderness about the angle of the jaw. The diagnostic sign which I have found decisive is—the severe pain produced by pressure when the finger, by some manœuvring, is introduced and pressed against the lingual aspect of the jaw at a point corresponding to the fang of the suspected tooth, and to the extremity of the mylo-hyoid ridge, where a yielding is experienced. The absence of any material swelling of the body of the tongue, or of tenderness there on pressure, will further obviate any likelihood of mistake. Having noticed this affection, I may state that its treatment is equally simple and effective—the opening of the abscess with the point of a bistoury directed carefully outwards and downwards, whilst the subsequent extraction of the offending tooth, will prevent a recurrence of the mischief. Leeches or other measures directed to arrest of sublingual inflammation are quite superfluous. The eruption of the dens sapientiæ, it may, in passing, be also observed, is often attended by suppuration between the superincumbent gum and the crown of the tooth; it is a painful affection, and sometimes tedious, and not uncommonly mistaken for rheumatic trismus.

"In a late case in which the system refused ptyalism, under mercury in course of administration for secondary syphilis, the patient, who had absented himself for some days, complaining that his mouth was now very sore, it was supposed that the mineral had taken effect. I found that he was labouring under suppurating gums, depending on the cause now described. The rest of the gums were healthy. Such examples enforce the necessity of actual inspection of the parts. The difficulty of opening the mouth, sometimes amounting almost to impossibility, is the result of the inflamed condition of the mucous membrane, where it covers the base of the adjacent coronoid process. I have found division of the gum down to the crown of the tooth with a sharp gum lancet to be a prompt and perfectly effectual remedy.

"Observation leads me to believe that idiopathic inflammation of the tongue is sometimes essentially of a *chronic* character. Two cases have presented themselves which appear to me to have been examples of that affection. The general appearance of the tongue has been similar. There was the same enlargement, though in rather a less degree; the same obtuseness and translucency of the edges; a like absence of pain, for even in *acute* glossitis there is no pain when unprovoked by pressure, and then only at the points where suppuration is to be apprehended. In the chronic form there is *neither* pain nor tenderness. The disease[1] is of slow progress, obscure origin, and, according to my experience, little amenable to treatment. I have known mercury to have been used without advantage, and have myself tried leeches, scarifications, and iodide of potassium, unsuccessfully. One of these cases occurred on the person of a man above the middle age, and no cause could be assigned for its origin. The other, in that of a child of a feeble constitution. In the former, the volume of the tongue seemed to cause difficulty of breathing. The child sank from collateral disease. In this latter case the affected organ was, perhaps, a little improved by iron, cod-liver oil, iodine, and good diet.

"There is yet another affection which possibly originates in chronic inflammation of the muscular or interstitial textures of the tongue, although I do not offer a positive opinion on that subject. It consists in the formation of isolated, firm, and rounded tubercles, about the size of a pea, not visible at the surface, but readily perceptible by grasping the organ at various points. The disease is painless, slow of progress, and has been occasionally confounded, even by experienced surgeons, with cancer. I have seen it attended by that milk-white opaque condition of the lingual epithelium, which appears to me not an unusual

[1] The case described by Dr. Clanny under the name of protrusion of the tongue in a child, seems to have been of a different kind. It was cured by returning the tongue within the mouth.

precursor of epithelial cancer of the organ. I have found it relieved, but not cured, by iodide of potassium."

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15. *Treatment of Hydatid Tumours of the Liver.*—Dr. Geo. Budd observes (*Med. Times and Gaz.*, May 19, 1860) that "an hydatid tumour of the liver, though at first it grows slowly, causes little or no pain, and excites no constitutional disturbance, constitutes, nevertheless, a very dangerous disease.

"Firstly. The tumour often continues to grow, with varying rapidity at different times, until at length it attains such dimensions as to cause great distress, and even to destroy life, from its mere bulk. I have met with two instances in which an hydatid tumour in the liver proved fatal in this way.

"Secondly. The tumour, when it has attained a certain size, may be ruptured by accidental injury, and the hydatid liquid be effused into the peritoneal sac—in which case it excites peritonitis, that proves very speedily fatal; or,

"Thirdly. The tumour may become adherent to some contiguous part, and open of itself, discharging its contents, as the case may be, through the abdominal parietes, through the lung, or into some part of the intestinal canal. In either case, a long and severe illness, with great danger to life, is the result.

"Fourthly. When the tumour is large, and has attained maturity, suppurative inflammation is apt to be set up within it, from conditions belonging to its nature, and a large hydatid tumour is thus converted into a large abscess with a thickened, and, it may be, degenerated sac—an abscess the danger of which is still further increased by the circumstance, that the sac likewise contains floating hydatids, and is lined by an hydatid membrane, which may prevent the free escape of the matter.

"Fifthly. When the tumour has attained maturity, it sometimes, there is reason to believe, throws off from its outer surface germs, which may become developed into fresh hydatid tumours.

"In one of these ways the disease, which may cause no illness and but little inconvenience at first, generally becomes after a time the source of terrible suffering and death.

"Sometimes, without special medical treatment, the hydatids lose their vitality. The sac that contains them then shrinks, its inner surface secretes a matter, looking like glazier's putty, in which the hydatids or their remains are embedded, and the tumour ceases to be a source of further danger. The hydatid sac, more or less reduced in bulk, remains, but the dead hydatids do not undergo putrefactive changes and excite suppurative inflammation, as dead animal matter shut up in the body usually does, and the tumour subsequently causes no further mischief than that which arises from its bulk.

"The object of medical treatment should be to produce by art and at will those changes in the tumour which sometimes occur without our special interference. This object is probably attainable by medicine. It has been supposed that iodide of potassium or common salt may destroy the vitality of the hydatids, and thus arrest the growth of the tumour; but in the great majority of cases, certainly, these medicines fail to produce this effect. The vitality of the hydatids may be destroyed, and the growth of the tumour arrested by simply withdrawing from the sac the hydatid liquor, leaving still within it the hydatid membranes.

"These membranes, and the animalcules of which they are the nidus, lose their vitality when deprived of the liquor from which they derive their sustenance; but if no air be admitted into the sac they do not undergo putrefactive changes. The tumour shrinks to a certain degree, and is no longer a source of danger.

"The circumstance that the dead hydatids do not putrefy, provided air or other decomposing substances be not introduced into the sac from without, is perhaps attributable to the large quantity of common salt which the hydatid liquor contains, and with which the hydatid's membranes are, as it were, imbrined.

"Numerous cases have been recorded in which hydatid tumours have been successfully tapped, so as to evacuate simply the hydatid liquor, by the common trocar and canula, and a prompt cure of the malady has resulted. But in operating by the common trocar and canula there is great danger.

"Before the tumour has become adherent to the abdominal parietes—and it seldom is adherent until it has existed long and grown large—all the liquid

within it may not be forced by the elasticity of the sac through the canula, and, when the canula is withdrawn, some of the liquid may escape into the peritoneal sac, in which case, as when an hydatid tumour is accidentally ruptured, it excites general peritonitis that proves very speedily fatal.

"When the tumour is adherent to the abdominal parietes, this danger no longer exists; but there is another source of peril. The tumour is then commonly very large and old; the walls of the sac have lost much of the elasticity which they originally possessed; and the tumour can only be emptied of its contents by the admission of air, which excites suppurative inflammation within the sac, and thus converts the tumour into a large abscess, which, from the state of its walls, can only close up very slowly. The strength of the patient is reduced, and his life imperilled by the protracted suppuration. In either case the danger of tapping may be obviated by withdrawing the hydatid liquor, which is as limpid as pure water, through a fine *exploring* trocar, by means of an exhausting-pump. The portion of the canula that enters the sac should be perforated by fine holes, so that, if its lower end should become blocked up by a floating hydatid, the liquid may continue to escape.

"By the suction of the pump, the tumour may be emptied of its liquid, and, even if it should not be completely emptied and should not be adherent to the abdominal parietes, the aperture made by the trocar will, in consequence of its minuteness and the contracted state of the sac, be completely closed when the canula is withdrawn, and none of the hydatid liquid will escape into the sac of the peritoneum.

"An instrument well adapted to the purpose is Weiss' double-acting stomach-pump syringe, which may be connected with the canula, when the trocar is withdrawn, by means of a vulcanized tube having brass ends, one end fitting into the outer extremity of the canula, the other for attachment to the piston of the pump. As an additional precaution against the admission of air into the sac, the brass end of the tube that fits into the canula may be furnished with a valve to be kept open only during the suction of the pump. An instrument of this kind was recommended by Dr. Bowditch, of Boston, in America, to abstract the fluid from the chest in cases of empyema; and last year one was made for me, for this purpose, by Weiss, according to Dr. Bowditch's plan.

"As in all cases of tapping where it is desirable to prevent the admission of air, the trocar should be inserted downwards, that is, the outer extremity of the instrument should be kept at a higher level than that in the body. The liquid will then rise in the canula, expelling the air from it; whereas, if this position be reversed, and the outer end of the instrument be lower than the inner end—air, which by the law of gravitation ascends in water, may pass up through the canula into the cavity which it is intended to empty."

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16. *Pathology and Treatment of Chloroanæmia.*—Dr. EISENMANN, from an extensive observation of this affection, concludes that it is especially developed under the influence of medical constitutions which predispose to nervous affections. It is especially met with at a time of life when all kinds of neuroses are very prevalent, its appearance being ushered in by nervous phenomena, at a period when as yet the blood has not undergone the slightest change. Such change may even be absent when the disease has reached its full development, nervous symptoms being observable, however, during its entire course. It is curable by agents which exert a special action on the spinal marrow; and when left to itself, it often gives rise to chronic, or even fatal, spinal affections. All these considerations lead the author to the final conclusion that chlorosis is a primary nervous affection, the change in the blood being a secondary phenomenon, due to morbid innervation. Guided by these views he treated several cases of the complaint by means of tincture of St. Ignatius' bean, with great success. Wishing, however, to effect a more prompt recovery than that which takes place when the bean alone is given, he associated it with ferruginous preparations, adding also rhubarb, on account of the constipation which is usually present. The following is the formula he employs: Powder of St. Ignatius' bean, 1 gr.; lactate of iron, or iron filings, iij. gr.; rhubarb, iii. gr. to iv.; and oleo saccharate of peppermint, iv. gr. This is repeated twice a day. When the stomach

is irritable, the iron is left out. This compound cures far more rapidly and effectually than do mere preparations of iron.—*Med. Times and Gaz.*, July 14, 1860, from *Bull. de Thérap.*, t. lvii.

17. *Employment of Chloroform internally and externally in the Treatment of Spasmodic Contractions of the Extremities.* By M. ARAN.—Spasmodic cramp of the extremities, which is sometimes also named idiopathic contraction, intermittent tetanus or tetanie, is a disease little known in its essential nature. Its appearances are very irregular; sometimes it does not occur for months or years, at other times it spreads, as it were, epidemically. This affection is painful in the highest degree; and, in some cases, is frightful by its extent and severity; it arises either apparently idiopathically, or supervenes on other diseases, without, however, changing in any way their character. Formerly believed by practitioners to depend on some grave lesion of the brain or spinal cord, this disease was treated by the most active measures; in the present day, since the prognosis is known to present usually nothing serious, physicians still have recourse to antiphlogistics, blisters, etc.; but the treatment of the affection yet remains uncertain, and often ineffectual. In an epidemic of these spasms or cramps, formerly observed by the author, he found no treatment at all satisfactory, except the prolonged extension of the contracted limbs, and revulsive applications to the affected muscles. Observing, however, the good effects which had resulted from the inhalations of chloroform, in a case of severe and truly tetanic cramp, as well as from topical applications of chloroform to the limbs in some other cases, and reflecting on the clearly spasmodic nature of the affection, the analogy to rheumatism which it often presents, and the acute pain which accompanies it, M. Aran was led to believe that chloroform might exert a very advantageous influence over these spasmodic contractions, a conjecture of which the following case showed the correctness: D., aged seventeen, shopman to a wine merchant, entered the Hospital St. Antoine on the 12th March. He is of a good constitution, well developed for his age, but of a lymphatic temperament; he has never been ill, but is exposed, by his occupation, to sudden variations of temperature, and for several months past has had his hands continually in water cleaning out bottles. The disease commenced three days before admission, with stiffness in the hands, and, on the following night, the rigidity appeared in the lower limbs. From this time the cramps have never entirely ceased; occasionally the rigidity and pain have diminished; but, from time to time, the stiffness became more marked, and the pains very acute in the limbs. When examined on March 13th, he was seated in bed, complaining of cramps in the upper and lower extremities. In the latter, the foot was forcibly extended, the point strongly depressed, and the toes bent; and this position, exactly the same in both feet, was maintained by the state of contraction of the posterior muscles of the leg, principally the gastrocnemii, which were hard and voluminous. The contraction of these muscles was very difficult to overcome, and returned when the foot was let go after being flexed. In these muscles, as well as in the extensors of the leg, incessant fibrillar contractions were perceived, which gave to the ear the sensation of the rolling noise produced by muscular action. There was no stiffness in the knee-joint, which the patient could flex and extend without difficulty; the movements of the hip-joint were somewhat impeded. In the upper extremities, the hands and forearms were in a state of forced pronation, the hands flexed on the forearms; the thumb adducted under the index, and the fingers bent. The flexor and pronator muscles of the forearm, and the biceps muscles, which were spasmodically stiffened, exhibited also the fibrillar contractions already mentioned. The sensibility was not materially diminished in the upper or lower extremities, although the patient felt a kind of numbness. On the contrary, muscular irritability was greatly increased, and the slightest contact excited and exaggerated the fibrillar contractions. The disease was limited entirely to the four limbs; there is no contraction of the muscles in the neck or chest, and no difficulty of respiration. The patient seemed to suffer severely; the skin was hot, bathed with perspiration; the face anxious; the pulse rather sharp, 84; but the other functions were in good order. The treatment consisted in the application of compresses, soaked with chloroform, to the posterior

muscles of the legs and to the forearms; and a potion, containing about forty drops of chloroform, of which a teaspoonful, to be taken every hour, was ordered, along with beef-tea. The applications of chloroform were followed by immediate relief, aided, doubtless, by the chloroform potion, which caused symptoms of slight intoxication. After two hours, the patient began to recover the power of extending the feet and hands without pain; and, in the evening, when a second application of chloroform to the limbs was made, the cure might be considered complete. The patient passed an excellent night, and, next day, there was apyrexia and complete freedom of movement. The chloroform was continued internally, in diminishing doses, till the 15th; there was no return of the symptoms, and the patient was dismissed in good condition on the 22d. He had the imprudence, however, to resume work, and on the evening of the 24th, the spasms returned, but in a much slighter degree than before. The same treatment subdued this attack without difficulty, and the patient was kept several weeks in hospital by way of precaution. M. Aran is not decided whether the speedy cure, in this case of intense spasmodic contraction, was due to the external or internal administration of the chloroform. In his previous experience he had found that the external application produced excellent effects, but that the amelioration was only momentary, and he is inclined to ascribe the permanent cure to the internal use of the chloroform in sufficient doses. As chloroform exerts a powerful local action, it is necessary to employ a moderate quantity in persons with a delicate skin, and it may even be necessary to dilute it with almond oil or camphorated oil of chamomile. Internally, the chloroform may be given without inconvenience or danger, to the amount of forty to fifty drops, in a potion of gum of four to five ounces, of which a teaspoonful is given every hour, which causes at most only a slight degree of intoxication. The author leaves it to the future to determine whether the internal administration of chloroform is as important in the treatment of spasmodic contractions as analogy had led him to suppose.—*Edin. Med. Journ.*, June, 1860, from *Bull. Gén. de Thérap.*, March, 1860.

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18. *Chloride of Zinc in Diseases of the Skin.*—Dr. VEIEL, of Cannstatt, has employed the chloride of zinc for the last nine years as a caustic whenever it was requisite to destroy morbid growths in the areolar tissue, or to remove abnormal secretions, as happens in different forms of lupus. He therefore employed it for a long time only in the cure of lupus and some allied diseases, such as lepra vulgaris, elephantiasis, and small circumscribed forms of scirrhus; but latterly he has also used it for the purpose of altering the condition of suppurating surfaces, and in chronic ulcers of the legs, chronic eczema and sycosis. Three forms of this salt are in use, namely, the alcoholic solution, the aqueous solution, and the solid cylindrical form. The first consists of equal parts of rectified spirit and chloride of zinc, the second of 10 parts of the chloride, 10 of hydrochloric acid, and 500 of water, and the third is prepared by fusing the chloride, and pouring it into moulds, as in the case of caustic potash. Dr. Veiel selects the solid form when his object is to penetrate as deeply as possible in order to destroy hypertrophic secretions, as happens in inveterate cases of lupus, in which the stick of chloride is used in the same way as caustic potash. The chloride was thus employed with the best results in thirteen well-marked cases of lupus, 1 of the alæ nasi, 6 of the upper lip, 4 on the cheek, and 2 on the ear. The proceeding is as follows: when there are scabs or thick scales, which have already destroyed the epidermis, poultices are used to remove them, but when the epidermis is preserved, it is dissolved by blistering plaster or spirits of ammonia. Then the solid chloride, fixed in a quill and pointed, is pressed deep into the hypertrophied and tuberculous tissue and the structures for 2 or 3 lines around it, until the salt has penetrated all the morbid growths in different directions. Immediately after this operation, the honeycomb-like and perforated surface discharges a dark bloody fluid, succeeded by a brighter-coloured serum, which after a few hours hardens to a smooth and firm scurf. On the third or fourth day, a thin pus is formed on the edge of the scurf, and the removal of this fluid by puncture generally relieves tension. On the sixth or eighth day, the scurf is loosened at the edges, and it may be entirely removed by poultices

continued for several days. It is seldom necessary to use the solid chloride more than three times, but in cases where the diseased structures are very thick, it must be employed much oftener. When the large ulcer is at last free from all swollen prominences, and on a level with the surrounding healthy parts, it should be poulticed for several days, then lightly touched with the alcoholic solution of the chloride every three or four days, and afterwards, when the edges begin to contract, with the watery solution, until a complete cure is effected, which seldom requires more than three or four months.

Besides lupus, there are a great number of skin diseases which are relieved by chloride of zinc. In obstinate eczema, occurring on the limits of the skin and mucous membrane, as on the eyelids, the lips, the labia, and the anus, the spirituous solution affords great relief. In eczema solare and impetiginodes, the daily employment of the aqueous solution is sometimes the only cure. In psoriasis, some indurations are occasionally left, after the cure of the complaint, on the elbows, back, and thigh, but they are easily removed by the alcoholic solution of the chloride, although the scales must first be removed. There is also a form of psoriasis palmaris, with painful warty indurations, which yield to no other means than the solid chloride, after they have been previously raised from their source by a blister. In sycosis and favus, after the beard or hairs are removed, the watery solution is very useful, partly in dissolving the swelling and infiltration of the follicles, partly in removing fungous growths. It is also useful in certain forms of acne, and in a great number of warty circumscribed scirrhous growths on the nose, the cheeks, and the lips.

Dr. Veiel considers that chloride of zinc is especially useful as a caustic, on the following grounds: 1. It enters into combination with all the elements with which it comes into contact, particularly with the proteinaceous matters, which again occasion a caustic effect upon the deep structures, whereby the parts in the immediate vicinity of the cauterized matter contract, and thus the diseased portion is diminished, and the edges of the sound parts approximate. 2. Because the irritation thus excited causes a more rapid formation of pus and dissolution of the scurf, whereby the cure is more rapidly accomplished, and the raw surfaces form better granulations. 3. Because the cicatrization following the peculiar contraction, the attendant destruction of the disease is more complete; and 4. Because the pain of the application, although severe, lasts only a short time, and may be easily moderated by chloroform. Dr. Veiel considers, for various reasons, that chloride of zinc is preferable to the strong acids, caustic potash, nitrate of silver, the preparations of iodine, the chloride of gold, and other caustics. It should be mentioned that as the chloride of zinc in the solid form is remarkably prone to attract moisture, it ought to be kept for use in a well-stopped glass vessel.—*Brit. & For. Med.-Chir. Rev.*, July, 1860, from *Zeitschrift der Gesellschaft der Aertze zu Wien*, Feb. 20th, 1860.

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19. *On the Therapeutical Methods of preventing Pitting of the Face in Confluent Smallpox.*—During the last five years Dr. Stokes has employed gutta percha and collodion in a considerable number of cases of confluent smallpox, for the purpose of preventing pitting of the face. In most of the cases the crust came off in large flakes or patches, composed of the dried exudations and the covering material, leaving the skin uninjured. This kind of treatment was most successful in cases of a typhoid character, but appeared to be not so well adapted to those presenting a more sthenic type. Dr. Stokes considers that the application of poultices over the face is the surest method of preventing disfigurement in smallpox. Their use should be commenced at the earliest period, and continued to an advanced stage of the disease. In most cases they may be applied even over the nose, so as to cover the nostrils. The plan should fulfil three important indications of treatment—namely, to exclude air, to moderate the local irritation, and to keep the parts in a permanently moist state, so as to prevent the drying and hardening of the scabs. The best poultice is formed of linseed meal, which should be spread on a soft material, such as French wadding, and covered with gutta percha paper or oiled silk. The conclusions to which Dr. Stokes arrives are the following: 1. That the chances of marking are much greater in the sthenic or inflammatory than in the asthenic or typhoid confluent

smallpox. 2. That, considering the change in the character of disease observed during late years, we may explain the greater frequency of marking in former times. 3. That in the typhoid forms of the disease the treatment of the surface by an artificial covering, such as gutta percha or glycerine, will often prove satisfactory. 4. That in the more active or non-typhoid forms the use of constant poulticing, and of every other method which will lessen local inflammation, seems to be the best mode of preventing disfigurement of the face.—*Dub. Quar. Journ. Med. Sci.*, Feb. 1860.

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20. *Neuralgia, with Deafness, cured instantaneously by the extraction of a tooth.*—M. ED. VAUTIER records (*Gaz. des Hôpit.*, 14 June, 1860), a case of this. The subject of it was a very nervous, slender woman, who had suffered for about four months with intense neuralgic pains, radiating through almost all the teeth, and also the muscles of the anterior region of the left side of the head. There was constant lachrymation of the left eye, and from the moment of the attack complete deafness in the ear of the same side. A number of physicians had been consulted, and sulphate of quinia, flying blisters, and atropia, in succession, tried without giving relief.

When seen by Dr. B. she was suffering severely; had long been deprived of sleep, and could not chew her food. The teeth were examined with care, but no one could be found carious. The wisdom tooth on the left side seemed, however, slightly painful on being touched, and loose. She was advised to have this tooth extracted, but with some temper refused. However, some days afterwards, her physician again advising it, she consented, and the tooth was extracted by M. Vautier. The pains at once ceased, and her hearing was restored. A month has since elapsed without any return of her complaint. She seems to be permanently cured.—*Journal de Méd. de Bordeaux*, June, 1860.

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21. *Cyanuret of Potassium in Neuralgia.*—M. ROCHE, in a communication to the Medical Society of Besançon, states that he has verified by a number of cases the efficacy of the external application of a solution of the cyanuret of potassium (20 to 30 centigrammes of the cyanuret in 30 grammes of water) in both fixed and superficial neuralgias. Although, says M. R., the physiological and therapeutical effects of the remedy show that absorption by the skin has taken place, he has never been able chemically to demonstrate this absorption.—*Gazette Médicale de Paris*, 14th July, 1860, from *Bulletin de la Société de Méd. de Besançon*, 1858.

[We have, in a number of cases, within the last twenty-five years, used this application for facial neuralgia, and, while in some it afforded prompt and entire relief, in others it failed to assuage the pains.]

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22. *On the Origin and Development of the Trichina Spiralis in Muscle.*—At the meeting of the Academy of Sciences in Paris, on July 2d, a communication was read from M. VIRCHOW, detailing the history and results of some interesting experiments which he has been making on the origin and development of the *trichina spiralis* in the muscular tissue.

According to M. Virchow, when a rabbit is fed on meat containing trichinæ. the animal becomes emaciated in the course of three or four weeks; it loses strength, and dies five or six weeks after the ingestion of the food. On examining its muscles, they are found to contain myriads of trichinæ; and there can be no doubt that death has been the result of progressive muscular atrophy, consecutive on the migrations of the trichinæ into the system. In one of the experiments, M. Virchow witnessed the death of the animal. It was so weak that it could not raise itself, but lay on its side; from time to time, it was slightly convulsed; then the respiratory movements ceased, while the heart continued to beat regularly; at last, death took place, after several spasmodic movements.

In his experiments, M. Virchow has obtained five successive generations of the trichina. He first fed a rabbit with trichinæ from a human muscle; it died at the end of a month. He fed a second rabbit with the flesh of the former one; this also died in a month. With its flesh, he fed three others at the same time; two died in three weeks, and the third in a month. He gave a large quantity of

the flesh of this to another rabbit, and a little to another; the latter died in eight days, but no morbid change could be discovered, beyond an intestinal catarrh: the former died in six weeks. In all the animals (except the last but one) all the striped muscles, except the heart, contained a very large number of trichinæ.

Carrying out his researches on the development of the trichinæ, M. Virchow has found that, a few hours after the ingestion of the diseased muscle, these parasites are found free in the stomach, from which they pass into the duodenum, and thence into the small intestine. On the third and fourth days, they are found to present distinct sexes—some containing spermatozoa, the other ova. Soon the ova are fecundated, and are developed, in the body of the mother trichina, into young entozoa. These are expelled through the vaginal orifice situated on the anterior half of the animal; and M. Virchow has found them, in the form of small *filariæ*, in the mesenteric glands, and in especially large number in the serous cavities, particularly the peritoneum and pericardium. They had, to all appearance, traversed the intestinal walls, probably by penetrating into the epithelial cells of the intestine. M. Virchow has never found them in the blood nor in the circulating passages.

Continuing their migrations, the trichinæ penetrate into the interior of the primitive muscular fasciculi; where, in three weeks, they have not only become numerous, but almost as large as those existing in the flesh with which the animal has been fed. To avoid error, M. Virchow has taken care, by removing a portion of muscle from the animal about to be experimented on, to ascertain that it was not previously infected with the parasite.

When the trichinæ have passed into the muscular tissue, M. Virchow says, this undergoes atrophy behind them; around them, irritation is set up, and from the fifth week they begin to be encysted. The sarcolemma becomes thickened, and a more active formation of cellular material appears to be set up in the muscular fibre;—the cyst, in fact, may be regarded as a result of traumatic irritation.

In the dog, the trichinæ pass readily into the intestines, but do not enter the muscles.

In the patient from whose body M. Virchow derived the muscular tissue for commencing his experiments, the phenomena attending death were precisely similar to those which were noticed in the rabbits on which his experiments were performed. The *post-mortem* examination revealed no other lesion than the presence of innumerable trichinæ in the muscles; but neither here nor in the rabbits were they visible to the naked eye. It is plain, then, that there may be cases of death from trichinal infection in which the presence of the parasites can only be recognized by the microscope. In those cases in which trichinæ have already been found in the human subject, it would seem not only that they had undergone encystment, but the cyst had for the most part reached an advanced degree of calcification. But, as the cysts do not commence to be formed until from the fourth to the sixth week, and the cretifaction probably after some months, it is probable that, where they have been found in man, a kind of spontaneous cure has been set up, and the symptoms attending the trichinal infection, having occurred long previously, have been overlooked or forgotten.

On making inquiry into the history of the woman whose body had supplied M. Virchow with the trichinæ, he learned from Professor Zeneker, of Dresden, whose patient she had been, that, four weeks before her admission into the hospital there, she had partaken of some pork containing trichinæ. The butcher who killed the pig also partook of its flesh, together with several other persons; and all had more or less severe rheumatic and typhoid symptoms; but the woman alone died.—*Gazette Médicale de Paris*, July 14th, 1860.

These observations of M. Virchow are of great interest both in their bearings on the pathology and the hygiene of an obscure affection.

It does not appear that pathologists, in examining the condition of the muscles in persons who have died of progressive muscular atrophy, have found trichinæ in them; at least Dr. Roberts, who has well epitomized our knowledge of the subject in his work on *Wasting Palsy*, makes no mention of this. M. Virchow's researches, however, decidedly point to the fact that the presence of

these parasites is, in a certain number of cases at least, the cause of the morbid phenomena; but whether the ingestion of trichinæ, and their development in the muscular tissues, is to be regarded as *the* cause of wasting palsy—even in those cases where the attack is general rather than local—is a question which requires further examination before it can be decided. In M. Zeneker's patient, death occurred in a few weeks after eating the diseased meat; while, in wasting palsy as described by previous writers, the course of the disease is ordinarily protracted through months and years. If a large proportion of the ordinarily observed cases of wasting palsy be really dependent on trichinal infection of the muscles, one of two things must occur; either the trichinæ must be capable of reproduction within the muscular tissue—which is not likely; or they must induce a permanently diseased state of nutrition of the muscles. Putting, however, speculation aside, we would place the matter for inquiry before pathologists. In a case of death from wasting palsy or progressive muscular atrophy, the muscles should be most carefully examined for trichinæ—not in single points alone, but in various parts of the course of each muscle. Virchow intimates, that the trichinæ in their course leave an atrophic state behind them.

In their hygienic bearings, these researches of M. Virchow belong to the same class as those which have rendered famous the names of Küchenmeister, Von Siebold, and other investigators of the origin and development of the parasitic entozoa. Here, as in the case of the cystic and cestoid worms, the presence of the parasites has been traced to the use of diseased food, and here also, as in numerous other cases, the pig has been found to be the animal at fault. According to M. Virchow, the tenacity of life of the trichinæ is great; well-smoked hams, however, kept for some time before being eaten, have no injurious properties, even though they contain these parasites.—*Gazette Méd. de Paris*, 14 July, and *Brit. Med. Journ.*, July 21, 1860.

23. *Treatment of Oxyuris Vermicularis.*—M. COMPÉRAT has proposed a new remedy for the cure of the *oxyuris vermicularis*, and states that it has always succeeded in his hands. The plan is to administer five, ten, fifteen, or twenty drops of sulphuric ether in an injection of cold water, and to repeat the operation a greater or less number of times, according to the number of the worms and their greater or less tenacity of life. The ether is said to have the advantage, by its tenuity, of easily impregnating the larvæ, and consequently killing the animalcule *in ovo*, and also, by its anti-spasmodic properties, of soothing the general and local nervous phenomena which may be occasioned in the rectum by the presence of this parasite.—*Brit. & For. Med.-Chir. Rev.*, July, 1860, from *L'Union Méd.*, July 19, 1859.

24. *On the Relative Amount of Sugar and Urea in the Urine in Diabetes Mellitus.*—A paper on this subject, by Dr. SIDNEY RINGER, was read before the Royal Medical and Chirurgical Society (June 26th, 1860). Two cases, patients in University College Hospital, under the care of Dr. Parkes, are given, in which the observations were made hourly over a considerable period, thus enabling the sugar and urea to be compared, under various circumstances, with greater accuracy. The following are the conclusions at which the author has arrived: 1st. That after the influence of food on the urine has entirely disappeared, a constant ratio is maintained between the sugar and urea. 2d. That after a purely non-amylaceous and non-saccharine meal, both the sugar and the urea are increased, but that during this increase the same ratio between them is observed. This ratio is 1 of urea to 2.2 of sugar. 3d. That under both these circumstances the sugar could only be derived from the nitrogenous elements of the body, and, therefore, that some such a ratio might on *à priori* grounds have been expected. The author next shows that after saccharine food has been taken, the sugar in the urine, as is well known, is increased, but that this increase of the sugar is accompanied by a decided increase in the amount of urea. Thus the sugar must cause a consumption of nitrogenous matter, probably resolving it into sugar and urea. Various kind of sugar were given, each of which caused an increase in the amount of urea, though whether one kind more so than another is not shown. These facts are sufficient to explain the cause of the loss of flesh in diabetic

patients. The author next shows that the amount of urea excreted in proportion to the amount of sugar taken in as food varies in different patients, and in the same patients at different times; and that the severity of the symptoms is in proportion to the amount of urea eliminated through the influence of the sugar, while no relation necessarily exists between the amount of sugar excreted and the severity of the symptoms: indeed, as is well known, the quantity of sugar in the urine may greatly rise in amount with the improvement of the patient. The method of arriving at the influence of an ordinary mixed diet is to ascertain the ratio between the urinary sugar and the urea; at least this method is sufficient in comparing various days together, provided the diet on these days be tolerably similar; for, he states, it is possible to conceive that though the amount of amylaceous matter may cause a much smaller quantity of urea to be eliminated, yet by increasing the former in the meal, the latter may be maintained at the same amount, or even increased, but a more nitrogenous matter would have been taken in with the amylaceous; the proportion of the former consumed would be much less, and consequently there would be more left to nourish the tissues. From this he thinks it is evident that the ratio must be obtained; for as most, if not all, the sugar generally passes off, it can be taken as a fair guide to the extent of the meal. This will explain those cases in which the improvement of the patient is accompanied with a decided increase in the amount of urinary sugar. The author shows, from the above cases, coupled with two others Dr. Garrod allowed him to take, that a ratio of 1 to 4 of urea to sugar is rapidly fatal; that life can be prolonged with a ratio of 1 to 8, while a somewhat rapid improvement is compatible with a ratio of 1 to 15. He next states that as the increase of the urea after a meal in health is probably due to the same cause as the increase under the same circumstances in diabetic patients, and as the sugar rises with it, maintaining the usual ratio (after a non-amylaceous meal), showing that they both come from the same source, if it can be further pointed out to what this increase in the sugar is due, it will explain the rise of the urea in health. After stating that it is possible that it may come from two sources, that it may be either due to some organ endowed with this function, which in diabetes is altered, or be the product of the retrograde metamorphosis of the tissue, he advances arguments to show that in these cases the sugar is due to the former, probably the liver. He thence concludes that the ordinary rise in the urea in health after a meal is due to that organ, which, in diabetes, produces a less highly elaborated sugar, the urea passing off unconsumed with the sugar. The author concludes his paper with a few facts of lesser importance, showing that the sugar, after a mixed diet, reaches its maximum in the early stage of the disease, during the third or fourth hour; while later, the maximum is not arrived at till the sixth hour. That after taking sugar in solution, the maximum is reached during the second hour. That the duration of the influence is longer later in the disease than at an earlier period: thus, at the commencement of the disease, the influence was lost in nine hours, while later in the disease it still continued after fifteen hours had elapsed. He also shows that the urea has a tendency to pass off earlier than the sugar, probably because it is more pernicious. Lastly, charts are given, showing the elevation of the temperature on several occasions after meals.—*Med. Times and Gaz.*, Aug. 11, 1860.

25. *Auscultation of the Head in Children.*—M. Roger terminates a memoir upon this subject with the following conclusions: 1. A cephalic *souffle* is very often heard in the chloroanæmia of very young children, the sound being quite exceptional in affections of the encephalon. 2. In all cases it is dependent upon a changed condition of the blood. 3. Chloroanæmia is of frequent occurrence during the first year of life, and at the period of dentition. 4. It is also frequent, as well as unappreciated, in pertussis. 5. By cranial auscultation this changed condition of the blood may be recognized at a very early period, and may then be counteracted—a fact of great importance in early life, in which any debilitating cause may lead to, especially when predisposition exists, a general tuberculization. 6. The *souffle* is frequently, if not constantly, heard in rickets. It aids in determining, also, the nature of this affection, which should not be con-

sidered as a disease localized in the osseous system, but as an affection due to a changed condition of the blood, capable of implicating all the organism. The author also points out in relation to this sound the importance of determining the exact period of the closure of the fontanelles.—*Med. Times and Gaz.*, July 7, from *Bull. de l'Académ.*, t. XXV.

[It should not be forgotten that we are indebted to the late Dr. Fisher, of Boston, for first calling attention to the value of cerebral auscultation as a means of diagnosis in certain affections of the brain. See his paper in Nos. of this Journal for Nov. 1833, p. 289 *et seq.*, and for Aug. 1838, p. 277 *et seq.*]

26. *On the Illumination of the Cavities of the Body by means of Electricity.* By M. FOUSSAGRIVES.—A long time ago, the author had conceived the idea that the electrical light might be advantageously substituted in diagnostic researches, or in operative manœuvres, for the ordinary methods of illumination, which are either insufficient in intensity, or defective by the colour of the light, or embarrassing by the impossibility of using them without interfering with the space required for instruments, and by the necessity, on account of the heat evolved, of keeping the light at a great distance from the surface to be illuminated. The whole problem consisted in discovering a source of light, with little or no calorific action, which might be condensed in tubes of small size and of diversified form, and which would be of sufficient whiteness not to alter materially the colour of the organic textures lightened up by means of it. By the assistance of M. Th. du Moncel and M. Ruhmkorff, this problem seems to have been solved in a satisfactory manner. M. du Moncel, having observed that the vacuum tubes of Geissler do not become heated under the influence of the electric light transmitted through them, and knowing, moreover, that this light is more brilliant in proportion as the tubes of communication between the terminal balls of the apparatus are of a smaller diameter, suggested that, in taking an apparatus of that kind, in which a long tube, almost capillary in size, should be bent upon itself, and convoluted in the manner of the electro-magnetic multipliers, we might obtain not only a kind of luminous cylinder, capable of being introduced into narrow cavities, but even a kind of electrical beacon, on certain points of which the light might be concentrated, without any risk either of overheating or of commotions of any kind. The first part of the problem was, therefore, solved. With regard to the colour of the light in the tubes, as this depends entirely on the nature of the gas on which the vacuum has been made, and as the colour is white with certain mixed gases, as Carburetted Hydrogen, Carbonic acid, Hydrochloric acid, etc., all that is required to meet this part of the problem is to prepare the tubes with suitable gases. M. Ruhmkorff, to whom the construction of these tubes was intrusted, and who has introduced several improvements in their formation, has obtained results which are quite satisfactory. He has found out a mixture of gas, which gives a suitable white light in the tubes; and experience has shown that the amount of light afforded by the apparatus is more than sufficient for the requirements of medicine and surgery.

Without for the present tracing absolutely the field of application of this new means of illumination, the following may nevertheless be pointed out:—

1. As a means of diagnostic exploration, in the examination of accessible organic passages, for the purpose of recognizing their normal or pathological condition. 2. As means of illumination to assist experimental action. It is easy to foresee the utility of this means in those operations which present, among their greatest difficulties, the impossibility of lightening up suitably the surfaces on which instruments are to act. In particular, the following will derive advantage from this new application—1st, Staphyloraphy; 2d, Operations for vesico-vaginal fistula; 3d, Extirpation of naso-pharyngeal or uterine polypi; 4th, Excision of tonsils, etc. Finally, certain dental operations, also, may be expected to be rendered more easy of execution by this proceeding. It may be questioned, also, whether the field of the retina might not be illuminated more easily and completely by the same means.—*Le Moniteur des Sciences Méd. et Pharm.*, 31 Jan., 1860.

27. *The Laryngoscope and its Clinical Application.*—Physicians have long endeavoured to facilitate the means for physical diagnosis in those diseases situated in localities of difficult access. The Academy of Medicine in France has very recently discussed the merits of an apparatus intended to illuminate the openings of the principal cavities in the body. We can recollect the attempts made even to illuminate the interior of the urethra; and now we have an instrument brought forward for the exploration of the larynx and such parts of the pharynx as are inaccessible to ordinary inspection.

This method of examination, of which the first employment seems to date back several years, originated in Germany. In 1855, M. Garcia had an instrument constructed for the same purposes as those now under notice, and even named it the *laryngoscope;* but, owing to the results obtained by it being unsatisfactory, it was very soon abandoned as useless; and it is only since 1857 that, owing to certain practitioners in Germany having devoted their attention to this subject, and having made numerous experiments towards the perfecting of an apparatus of the kind, an instrument has been produced capable not only of assisting in the diagnosis, but of serving to guide the hand and otherwise assist in the treatment of disease of these parts.

It is chiefly to the labours of MM. les docteurs Turck of the General Hospital at Vienna, and Czermak, Professor of Physiology in the University of Pesth, that we owe the principal facts ascertained in regard to such appliances and their construction; while their first practical application as adjuvants in clinical medicine has been made by MM. Semeleder. Stoerk, Gerhardt, and some others.

The instrument used by M. Czermak consists of a small mirror, square or oval, or even round in shape, and having a handle fixed to it at one corner or side. The size of the mirror should correspond with the size of the parts to be examined; but between 15 and 30 millimetres, or perhaps an average size of 20 millimetres in diameter, is the dimension suited for the majority of cases. The thickness of the mirror should be about 2 millimetres, as any smaller size is apt to become cool, and to have vapours condensed upon its surface, and so lead to inconvenience during its use. The handle should be about 8 or 9 centimetres long, and so flexible that it may be adapted to the parts, and yet not be liable to bend during its application. The most important point is the mode of obtaining a sufficient amount of light during this process; and in order to do so, M. Czermak does not depend upon the light of the sun, as others have done, but adopts the method of artificial illumination employed by Professor Helmholz in ophthalmoscopic operations.

The mode of procedure in using this instrument is as follows: The patient is seated in front of the operator; the hands resting on the knees, the body inclined forward, the head thrown back, the mouth widely opened, and the tongue as much depressed and flattened as possible. The operator sits *vis-a-vis* with the patient, and grasps the knees between his, having taken care to place the patient in the fullest light of a lamp placed upon a table at his right hand, the lamp having a beak or neck, as in the ophthalmoscopic apparatus, which shall throw a vivid stream of light into the back part of the mouth.

The next stage in the procedure is to introduce the mirror, sufficiently warmed and adapted to the part desired to be examined. In order to effect this, the patient is told to take a deep inspiration and emit the sound of the letter ê alternately. During this manœuvre the mirror is introduced under the velum palati, thus raised for the moment, and then directed so as to suit the position of the part to be inspected. This process, which is that recommended by Garcia, has been improved by Czermak, who, besides the reflecting mirror, adds an illuminating one with an opening in its centre, through which the eye of the operator is directed; and this second, or illuminating mirror, is fixed either round the head of the surgeon, or in the manner of a pair of spectacles, or held between his teeth—the latter being the plan followed by Czermak.

Laryngoscopy thus performed by a dexterous and experienced hand—because it requires much experience to acquire facility in its practice—enables not only the deeper portions of the larynx to be examined, but even the bifurcation of the bronchi to be distinguished; and in this manner M. Czermak has diagnosed cases where hoarseness was supposed to be of a nervous nature, to be cases of

organic disease of the vocal chords, etc. etc.—*Edin. Med. Journ.*, June, 1860, from *Gaz. des Hôp.*, March and April, 1860.

28. *New Experiments regarding the Origin of Cow-Pox.*—The opinion of Jenner regarding the origin of vaccinia, alternately supported and contradicted by various observations, is at present, at Toulouse, being tested by new experiments, of which Dr. A. Fontan has given the following account, dated Toulouse, 24th May, 1860:—

"A happy accident occasioned my passing through Toulouse at a time when a question of the highest importance was being submitted to experiment, I mean the question of the origin of vaccinia. The following is an abstract of the principal facts: Some weeks ago, M. Sarrans, of Rieumes, observed that several mares brought back to his establishment for the second or third time, were affected with the *grease* (*eaux-aux-jambes*). There was a sort of epidemic of the affection, for nearly a hundred horses were found to be suffering from it. The variety of grease was the pustular form.

"One of these mares was taken to Toulouse to the veterinary school, where the learned Professor M. Laffosse soon recognized the true character of the epidemic. He inoculated with some of the matter of these pustules the teat of a cow, in the presence of his assistant and numerous pupils. Soon afterwards fine pustules made their appearance on the udder of the cow. One of the most distinguished physicians of Toulouse, Dr. Cayrel, the official vaccinator of Toulouse, vaccinated, with matter from the pustules of the cow, several infants who had never been vaccinated. Well characterized vaccine vesicles followed, presenting their pearly aspect, central depression, and rose-coloured areola, increasing in size from day to day without any trace of erysipelatous inflammation.

"A second cow was vaccinated with matter from the first cow, and infants were vaccinated with the matter from the second cow: the results were equally satisfactory as in the former case. At present they have arrived at the fourth vaccination from the first cow, and at the third from the second cow. I was present at this vaccination; the vesicles were very fine. One was photographed in my presence, with a tolerably satisfactory result. The vesicle presented the most characteristic appearance of vaccinia. When pricked, no purulent matter escaped, but gradually a serous fluid oozed out in great abundance, with which several infants were vaccinated.

"The new matter is very active, and succeeded in the case of a pupil of the veterinary school, vaccinated in infancy, and in whom all previous attempts at revaccination had failed. I saw a vesicle in an infant produced by the virus of this pupil, finer and more developed than three other vesicles produced by an ordinary vaccination in the same infant. (No doubt the two vaccinations were performed simultaneously.)

"Already thirty infants have been vaccinated at Toulouse. No unpleasant symptoms have manifested themselves in any case; and in all, the result has been most satisfactory.

"Dr. Izarié, formerly vaccinator in Paris, considered the vesicles so good, that he had his son vaccinated this morning with virus from one of the infants.

"An official commission has been named by the Prefect to carry out these experiments. A report will be drawn up and communicated in due time."—*Ed. Med. Journ.*, July, 1860, from *L'Union Médicale*, 29th May, 1860.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

29. *Sanguineous Tumours the Result of Accidents.* By WM. HARGRAVE, Prof. Surg. Royal Coll. Surg.—Effusions of blood the result of injuries may present one of the following appearances: 1st. Ecchymosis, more or less extensive, indicating its characters by the alteration in colour of the skin, and limited

principally to the capillary vessels. 2d. A general diffusion of blood through the parts contused, with more or less pitting on pressure, and not for some days causing any discoloration of the integument; this occurs when it is effused in the deeper tissues close to the bones, after which period the change in the colour of the skin often becomes very similar to what is seen in superficial ecchymosis. 3d. The blood may be located and circumscribed in a cavity, giving all the characters of the bloody tumour or sanguineous deposit; when it is effused under the scalp, forming the peculiar characters of this kind of tumour so well known in this region, so likely to be confounded with depressed fracture of the cranium. This kind of tumour is generally considered special to this region; still, where blood becomes effused from violence over bones, or other resisting surfaces in other situations, we find it presenting analogous symptoms, giving rise to the possibility of an error in diagnosis. In a case of this kind over the fibula, the bone presented all the phenomena as if a circular piece of it was driven into the interosseous space by a punch, surrounded by a firm resisting rim; but the hardness and crepitus which here were present disappeared under pressure, returned after a little time, again by the same means disappeared, which led me to a correct diagnosis which the subsequent treatment proved to be correct. A more remarkable case was in a man admitted November 12, 1857, John M——; he was carrying a heavy trunk across his loins, and made a false step, which caused it partly to slip from its position, but not to fall off; the result was, the cellular membrane connecting the skin to the lumbar region was lacerated, and a large quantity of fluid blood was effused in this region, forming a bag or sac as large as my entire hand. The circumference of this tumour was as well defined in resistance by a firm ring as any scalp bloody tumour that was ever presented to the practitioner; this large quantity of blood never caused any cutaneous discoloration, and was completely absorbed in one month, being discharged from hospital December 12.

When these tumours are very deep-seated, they occupy a long time before they come to the surface containing blood; sometimes the colouring matter of it is absorbed, and after the lapse of many months the characters of a serous cyst is recognized by the surgeon, who, by a careful investigation of the case as to its history, will form a correct opinion of its formation; while, in some rare cases, the fluid contents of the cavity are absorbed, and a reddish-brown kind of tumour is the consequence of the accident, and in others still more rare instances, the effused blood has remained for years dormant, undergoing no alteration in its physical qualities; the cavity when opened presenting this fluid of its normal appearance. The following cases are examples of a long period elapsing before the tumour in any way approached the surface: Patrick F——, a brewer's labourer, was admitted into hospital, having met with the following accident three months before admission: the lower part of his right thigh was severely bruised, almost crushed, between two porter barrels. On examination, a large fluctuating soft swelling was detected above the knee and to the inner side of the thigh, evidently containing a fluid which was considered to be a purulent collection; it was very superficial, with no tegumentary discoloration. This man was of a highly sanguineo-nervous temperament. Before the abscess was opened he asked for chloroform, and when *slightly* under its influence I passed a lancet into the most prominent parts of it, avoiding the saphena vein; pus first issued from it, then mixed with fluid, and some coagulated blood. The wound was immediately closed and maintained by suitable appliances. A smart attack of irritative fever followed, which required some days to subdue; cold evaporating lotions were applied to the swelling, conjoined with rest, and bandages carefully applied; the contents were absorbed, the man leaving the hospital convalescent, and experiencing no inconvenience from a bloody tumour containing pus being opened.

The next case is one of some novelty. James K——, a discharged soldier, admitted into the City of Dublin Hospital, August 30, 1858, for secondary syphilis. In the following month of January he called my attention to a very prominent swelling occupying the left nates, bulging up into the gluteal fossa, in fact, making it convex. No uneasiness or distress of any kind, but evident fluctuation. As abscesses at that time were almost of daily presentation, both

at the dispensary and formation in the hospital, I passed a lancet into it, when a quantity of grumous blood, speckled with pus, issued from the wound, and continued to flow through it, which was immediately closed and so maintained. On questioning him if he ever received an injury on this region, he stated he was at the relief of Lucknow, in September, 1857, was struck with the butt of a musket on this part, and was felled by the blow. On recovering himself he was able to walk, though badly; the effects of the injury so soon subsided that he took no further notice of it, when, after the lapse of some months, the swelling began to appear, to which he called my attention, which I opened as an abscess, but in reality a sanguineous tumour which lay dormant for nearly sixteen months, and was slowly and most chronically passing into the suppurative stage, as evidenced by the purulent dottings mixed with the blood. He experienced no inconvenience whatever from its being opened, the wound healed, the swelling subsided, and he left the hospital convalescent, February, 1859. This man suffered no irritative fever of any kind; the former had a smart attack of it, he was of sanguineo-nervous temperament, the soldier of a bilious one. Could these temperaments be the cause of the difference in the results of opening these tumours?

In the treatment of sanguineous effusions, the abstraction of blood is often indicated, either by leeching, by cupping, or by venesection. The two first have almost superseded the last. Venesection may be considered the exception in medical practice in its widest sense as a remedial agent at the present day. Of late this practice has been much canvassed and completely rejected by some practitioners of authority, and is likely to become a mere historic record of what was formerly the rule. I confess that at the period I entered the profession venesection was actively, and *I will add successfully, practised, cum pleno rivo ad uncias viginti. vel ad deliquium animi*, and many recoveries and few deaths were the result. Of the juvenile operators I might say of myself, *æuorum magna pars fui.* My early training and observations then made on this practice is so implanted in my mind that I have not abandoned the lancet, as others have done, but use it in not the same heroic way it was at the time I refer to. We all acknowledge that a remarkable change has come over our organization, the *vis vitæ* is no longer above par, or at par, but in most cases below it. Is it for this reduction of our forces that so useful a means of combating disease is to be abandoned? Certainly not; but proportion the quantity of blood to be drawn to the strength of the patient, and no unpleasant result but benefit will follow from it. To prevent the possibility of my being misunderstood, in place of taking a dash of blood of twenty ounces at once, as was formerly the hospital parlance and practice, let but from four to six be abstracted, and much relief will attend it, by which the oppressed organ and condition of the parts injured will be relieved; while the venous vascular system being quickly emptied, a stimulus is thus given to the absorbent system, and the rapid disappearance of effused fluids follows this practice, and which I have no reason to regret up to the present time; while the scarificator will not be required with its markings, nor the annoyance of the application of leeches be endured, or the unpleasant consequences which sometimes follow their bites when made in the integuments which cover extravasated blood. I feel satisfied that all classes of practitioners have gone into the opposite extreme by ignoring the lancet too much. I have been speaking of venesection as applied to the bend of the arm; but there is another—namely, that of the external jugular vein—an operation in some cases of great value, which not many young men passing from the schools into practice know how to perform single-handed and with success, without any dread of air being suddenly absorbed into the vein and killing the patient with intense rapidity by being hurried along it to the heart. The feeling alone of being considered egotistical prevents me giving such directions for opening the jugular vein, apparently a simple operation, as would guard against all mishap.

At some future period I may assign my reasons for the decadence of the *vis vitæ* at present so patent to all observers; but it is only temporary, the coming-on cycle will show to those who see it that the human system will again rally, and with benefit will bear the lancet as a remedial agent.—*Dub. Med. Press*, July 11, 1860.

30. *Report of Twenty-four Cases of Tracheotomy performed in the Last Stage of Croup.*—In this paper Dr. Fock gives an account of the cases of tracheotomy for croup which have occurred in his practice, and in that of his colleagues, at the Magdeburg Hospital. He observes that, notwithstanding some of the leading practitioners in Germany—such as Langenbeck, Baum, Roser, and Bardleben—resort to the operation, and recommend it in their lectures, it has obtained no general admission into German practice. Of these 24 cases, 10 were successful, the particulars of both these and the unsuccessful cases being exhibited in a tabular form. To this statement Dr. Fock appends some observations.

1. These cases are decidedly in favour of the operation; inasmuch as it was not resorted to until a stage of the disease when death seemed quite inevitable without it, notwithstanding the persevering employment of the various remedies. The saving 10 out of 24 children, apparently absolutely condemned to die, cannot be regarded as other than a great success. It is not desired to draw from these facts the conclusion that the operation should be resorted to in every desperate case of croup, although it is very difficult to indicate in which of such cases it should be abstained from. It would be a mistake to estimate the degree of danger alone from the amount of dyspnœa; for even when this becomes suffocative during the operation, success may yet be the result. As a general rule, it may be stated that the most favourable prognosis may be delivered in those cases which exhibit themselves from the first as pure croup, and are attended by constantly-increasing paroxysms of dyspnœa; while the contrary is the case when there has been a preliminary bronchial catarrh during several days, and when the child, after seeming to be in a state without any peril, suddenly passes into a condition of actual croup. Either on account of the small quantity of air which enters through the contracted larynx, no bronchial *râle* is produced, or its existence is masked by the laryngeal sounds. The operation is resorted to, and the child in all probability dies with bronchitis and pulmonary œdema. When accompanying the croup, too, a wide-spread bronchitis is observable, the dyspnœa may be more dependent upon the latter than upon the obstruction of the larynx. Pulmonary œdema is probably already present, and death will take place within twenty-four hours after the operation. The difficulty in the performance of auscultation and percussion in these cases is sometimes immense, and may amount to an impossibility. In such instances we can only fall back on the history, and remember that cases of croup in which the disease has become developed with rapidity and violence are more favourable for the operation than those in which it has for some days been preceded by catarrh. In the latter cases the operation should be declined. Again, the prognosis has always been, within the author's experience, of a favourable character when the depressions below the larynx and at the epigastrium become very marked during inspiration. The exaggerated actions of the inspiratory muscles, especially the accessories, augment such depressions much when the lungs are entirely free, and the obstacle is only placed in the larynx; but the smaller amount of such depression is quite remarkable when there is co-existing pneumonia, extensive bronchitis, or pulmonary œdema. In such cases the probabilities of success are too small to warrant our undertaking an operation. Lastly, the constitution should influence our prognosis. It is decidedly more favourable in thin, long-necked children, than in those of an opposite conformation. In determining whether we shall operate in a given case, we have to ascertain whether the after-treatment, as regards watchfulness, skilful nursing, &c., can be secured—matters which, however easily provided for in a large town, and in a hospital, may not be attainable in a country district; and yet upon them the result may entirely depend.

2. As to the operation itself, the reporter enters into the details and the difficulties of its performance, which we need not repeat. He says he always resorts to chloroform, which renders the operation far more easy of performance; and he has never, even in extreme dyspnœa, found any ill effect to result from its employment. At first the dyspnœa is increased by the inhalation, but the narcosis is speedily established, and then the breathing becomes much calmer than before.—*Brit. and For. Med.-Chir. Rev.*, July, 1860, from *Deutsche Klinik*, 1859.

31. *Scalds of the Larynx.*—Of the many accidents to which children are liable, one of the most painful and fatal is that produced by swallowing or attempting to swallow boiling fluids. Dr. PAUL BEVAN, in an interesting article in the February number (1860) of the *Dublin Quarterly Journal of Med. Sci.*, relates four cases of this accident, and advocates the old method of treatment in preference to tracheotomy, now generally advised.

Dr. B. divides the symptoms into two stages. "In the first stage, the mouth and fauces alone are affected, but the respiration is unimpaired. In the second, the ingress of air is impeded by laryngitis; and œdema glottidis, and incipient congestion of the lungs, are the result. In the third stage, engorgement of the lungs, and consequent congestion of the brain, are added to the previous symptoms. This division can be made in all cases; in some, no doubt, the second follows the first stage so rapidly that they might be said to be simultaneous; but, in the majority, an interval of several hours takes place between them. The child, immediately after the accident, suffers most intensely; he keeps his hand to his mouth and larynx, screams violently, and cannot swallow. After the fright and immediate pain have passed over, no bad symptom may come on for several hours: during this period he may play or sleep, or even eat fruit or cakes, given to him by his parents to stop his cries. At this time the mouth and fauces are red; white blisters are seen on the lips, cheeks, and near the root of the tongue, but he breathes without difficulty. That the symptoms are so trifling at first, should be carefully borne in mind by the surgeon. I have known several cases where children lost their lives from inattention to them in this stage; and the mistake is the more liable to occur, as frequently the symptoms are in no way more severe or different than those arising from simple scalds of the mouth, which will, of course, be rapidly cured without any treatment.

"The second stage, whether it comes on rapidly or slowly, presents much more alarming symptoms. The breathing is stridulous and croupy, rapid and much embarrassed; the features are bloated and pallid; pulse rapid; skin cold and damp; he has a tendency to doze, but can readily be roused. In addition to the changes observed in the mouth during the first stage, on examination, the epiglottis will be felt by the finger to be round and hard, of the size and shape of a gooseberry or large nut, whilst sonorous and sibilant rales will be heard over the greater part of the chest. These symptoms continue for several hours, and are gradually changed into those of the third stage; in it, the respiration becomes more and more laboured and croupy; the efforts to inspire are more painful; the larynx is drawn up and down rapidly, and deep fossæ are formed above the clavicles during the convulsive efforts to fill the chest. The little patient lies with his head thrown back; his eyes fixed, half open, and turned up under the lids; the pupils are fixed and dilated; his face is swollen and purplish; his mouth half open; he tosses his arms about; and, although semi-comatose, vainly seeks to relieve the sense of impending suffocation from which he is suffering. During this stage, the mucus is heard rattling up and down in the lungs and bronchial tubes; coma gradually increases, until he either dies in that state, or is carried off in a paroxysm of convulsion.

"The treatment recommended and adopted by the most distinguished surgeons and physicians of the present day may be summed up in a few words: at first, antiphlogistics; and then, the operation of tracheotomy; the only difference of opinion being as to the time at which the operation should be performed."

Dr. B. says: "If the patient is *in extremis*, then, no doubt, the surgeon is justified in trying the operation, as, although nearly hopeless, it is the only treatment which can save the patient from immediate dissolution; and that occasionally such a case may recover, is proved by a few instances reported in the periodicals and in books. Still I believe that the antiphlogistic treatment, if conducted with sufficient rapidity, will be far more successful; but, to be successful, it must be rapid and energetic in the extreme; a few hours are all we have for treatment, unless we can suddenly stop, or at least delay the progress of the second stage; the injury to the lungs and brain will be such as to preclude the possibility of success.

"I commence the treatment with an emetic, followed by a cathartic enema, at the same time a few leeches, according to the strength of the child, are applied

over the upper margin of the sternum, the bleeding being encouraged by a warm fomentation or poultice. Should the child sleep, I leave directions that I shall have notice of his having awakened, or visit again in a few hours. Should symptoms of the second stage appear, I commence calomel in doses according to the age and strength of the child and the severity of the symptoms. The leeches should be repeated every third or fourth hour, if the strength of the child permits it, great care being taken to avoid hemorrhage from the bites, or exhaustion from loss of blood; for this reason it is indispensably necessary that either the surgeon or a competent assistant should visit before each repetition of the leeches. The calomel should be repeated at very short intervals, every hour or half hour, and the body should be rubbed with mercurial ointment, or a portion of the ointment be placed in each axilla, the object being to produce the specific effect of the mineral in the shortest possible time.

"The effect of this line of treatment has been most satisfactory. The leeching gave relief for the moment, and, although its effects were transitory, yet it gave time for the action of the mercury, in all probability promoted its absorption, and at the same time diminished the congestion of the brain. As soon as the mercury produced the green stools, the symptoms in every case were improved, and the child recovered. The lungs were the first organs relieved, the brain next, and the larynx last of all; indeed, for several days, after all other bad symptoms had disappeared, the epiglottis remained swollen and hard. Should the case have arrived at the second stage, the orthopnœa being considerable, and the congestion of the lungs rapidly coming on, I at once and the same time use the emetic, leeches, enemas, and frictions with mercurial ointment. As soon as the stomach is sufficiently settled, after the emesis, I give the calomel in two-grain doses, and usually repeat it every half-hour, till its effects are produced, the leeches being repeated as before, every second or third hour, according to the strength of the patient. It may be said that similar treatment has been tried by others. No doubt, leeching and bleeding have been much practised. Dr. Watson seems to place his principal reliance on this and on tracheotomy; but he gives some cases himself where it did not succeed; and I have seen two where it was carried to such an extent as to produce complete exhaustion, and still the disease appeared to me to progress the more rapidly. In fact, I look upon its effects as merely transitory, and of importance in saving the brain and lungs from impending congestion until the mercury has time to act. Mercury has been lauded by some, and dispraised by others. Dr. Watson does not depend on it; he says: 'We cannot reckon upon its influencing the system *in time*, nor upon any marked improvement of the symptoms, when it does produce its specific effects.' No doubt, if given as it generally is, two grains of calomel every third hour, the patient will die before its effects are produced; but, if given every half-hour, in one or two grain doses, its effects will be produced in an extremely short time, especially if assisted by mercurial inunction over a large extent of surface. This method of rapidly producing the effects of mercury on the system has been taught us by cases of injury of the head, where in a few hours we have salivated adults by small and rapidly repeated doses of the metal; in the present cases the green stools were produced in one so early as eight hours after the first administration of the mercury, and, in the other cases, in periods varying from eighteen to twenty-six hours. I do not deny that patients may die, even after the action of the mercury on the system, but I have never seen an instance of it except one where I had previously performed tracheotomy, from which circumstance I now doubt whether he would not have recovered had the operation been omitted. It may be said that four cases are not sufficient to establish any line of practice. My answer is, that they are the only cases I have had since I made use of this mode of treatment, and as they were all successful, I think I am justified in publishing them, in hopes they may lead others to follow the same course, and publish the results. It might be thought that the administration of such large doses of calomel in so short a time would be objectionable, but, except in one case, where an increased flow of saliva for a couple of days, and, in another, where a slight diarrhœa succeeded, no bad effects whatever resulted, and the children appeared to enjoy perfect health after a few days.

32. *Fractures of the Neck of the Humerus.*—Dr. P. H. WATSON exhibited to the Medico-Chirurgical Society of Edinburgh (June 6th, 1860) two specimens of fracture of the neck of the humerus, complicated with impaction—one *intracapsular*, the other *extracapsular*, or through the anatomical and surgical necks, as they were frequently called. The latter he showed merely by way of contrast with the former. In the intracapsular, the impaction consisted in the head of the bone being driven into the upper part of the shaft; in the extracapsular, the upper and inner part of the shaft was driven into the cancellated structure of the head. In both, complete osseous union had resulted.

Dr. Watson stated that he thought the first specimen, as being an instance of completely united intracapsular fracture along the line of the anatomical neck, would be interesting to the Society, as some surgical authorities had denied the possibility of such an injury occurring at all; while others seemed to believe that, if it occurred, the separated portion could not retain its vitality, and others had taken it for granted that, if fractured, and retaining its vitality, osseous union could not result. Now, although undoubtedly necrosis of the separated head did sometimes ensue (and he was acquainted with two such cases, the portion losing its vitality giving rise to suppuration, and requiring to be removed as a sequestrum), still, a more common result seemed to be impaction of the head between the tubercles of the humerus, producing a secondary fracture of the upper part of the shaft, attended with more or less comminution. Such had obviously been the case in this preparation; and Dr. Watson begged the Society to observe, with reference to the displacement, that, while in impacted fractures of the surgical neck of the humerus, the *neck* was driven into the *head* of the bone, in impacted fractures of the anatomical neck of the humerus, the *head* was driven into the *neck*, and was, therefore, the converse of what was observed in the extra and intracapsular fractures of the neck of the femur.

Dr. Watson also remarked, that some recent writers upon the subject of such fractures had wished to attribute the displacement of the head of the bone into the upper part of the shaft, to the effects of chronic inflammation and interstitial absorption following the injury, and occurring gradually, and not to the direct effect of the injury itself—muscular contraction being presumed to assist in producing this gradual change, by drawing the shaft inwards and backwards against the separated head of the bone supported against the glenoid cavity. A single glance, however, at this preparation and the glenoid surface of the scapula, would, he thought, show that such was not the case in this instance; for it was obviously the displaced and altered lesser tubercle which alone had been in contact with the glenoid cavity, the opposed surfaces being grooved and polished against each other, while the head of the bone, lying completely behind and below this new articulation, was in no way connected with it.—*Edinburgh Med. Journ.*, July, 1860.

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33. *Intracapsular Fracture of the Neck of the Humerus.*—Dr. SPENCE exhibited to the Medico-Chirurgical Society of Edinburgh (May 2, 1860), a specimen recently obtained of this peculiar form of fracture. A man, advanced in life, in consequence of a fall, sustained a fracture of the neck of the humerus; about fourteen days after, he was attacked with apoplexy, of which he died, about four weeks after the date of the injury. On examination, it was found that the fracture differed from that usually observed in adults—the fracture passing, not through the surgical neck of the bone, but through the anatomical neck, *i. e.*, between the head and the tuberosities, and within the capsular ligament. This fracture in the humerus is, therefore, entirely analogous to the intracapsular fracture of the neck of the femur, which occurs so frequently in old people. An opportunity rarely occurs of ascertaining by dissection this form of fracture of the neck of the humerus, which may possibly, therefore, be more common than is usually supposed.—*Edin. Med. Journ.*, June, 1860.

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34. *Contributions to the Pathology of Dislocations of the Shoulder-joint.*—Mr. W. H. FLOWER, in a paper read before the Royal Medical and Chirurgical Society (June 12th, 1860), endeavoured to reconcile the discrepancies and correct the errors which are found in the descriptions of the dislocations at the shoulder-

joint given by most English and foreign surgical authors. In the endeavours to accomplish this object, three methods of investigation were adopted: 1. An original examination of the symptoms of recent examples, and of the published records of cases. 2. Experiments upon the dead subject. 3. Examination of all the specimens which illustrate the subject preserved in the anatomical museums of London. A table was appended of thirty-two recent cases, contributed by House-Surgeons of several London and provincial Hospitals, according to a form drawn up by the author; the principal aim having been to obtain an accurate record of the symptoms, with measurements, in a number of cases in which the exact position of the head of the humerus, so far as it could be ascertained by external examination, was established. An account of the examination of forty specimens of dislocation at the shoulder-joint, contained in the various anatomical museums in London, formed the second table. In entering upon this part of the investigation, care was taken to exclude cases that may have been the consequence of disease; and, with this view, the differential characters of the changes produced by chronic rheumatic arthritis and by unreduced traumatic dislocation were pointed out. The general results of the inquiry were given in observations upon some of the special forms of dislocation, of which the following are the most important: 1. *Subglenoid.*—"Downwards and forwards; the head of the humerus placed in front of the inferior costa of the scapula, below the glenoid fossa." The cases contained in the appended tables appeared conclusively to confirm the observations of Malgaigne, and the modern French school, that this form of dislocation is comparatively rare—an opinion opposed to that of the majority of English, German, and earlier French authors. Of the thirty-two recent cases in Table 1, five were assigned to this variety; and of the forty specimens in Table 2, but three, even if one were included which was properly an intermediate form between this and the subcoracoid; in all, eight out of seventy-one. The author remarked that it was difficult to understand how the wide-spread error of regarding the subglenoid as the typical form of dislocation at the shoulder-joint should have been so long maintained. A simple process of reasoning upon the anatomical structure of the part would suffice to show that, whenever the humerus is thrown from its socket, it will, almost of necessity, be drawn upwards until it is arrested, either by the coracoid process in front, or the spine or acromion behind. Even in the dead subject, when the humerus is dislocated by fixing the scapula and forcibly elevating the arm, it is almost always drawn up close against the under surface of the coracoid process; *à fortiori*, in the living, must the action of the deltoid, coraco-brachialis, and biceps cause it to assume this position. In fractures about the neck of the humerus the action of these muscles in raising the lower fragment has long been recognized. 2. *Subcoracoid.*—"Forwards and slightly downwards; on to the neck of the scapula, in front of the glenoid fossa, and immediately under the coracoid process." Under this term were included two varieties, which Malgaigne considers distinct, and designates respectively "subcoracoid" and "intracoracoid." The author observed that, although there are doubtless characters by which well-marked cases of either can be determined, the difference between them is slight, and being rather of degree than of form, there seems no practical advantage in retaining it in our classification. The anatomical characters of this form of dislocation, when recent, were fully described in the paper, as were also the changes which take place in the ends of the bones when left long unreduced, the latter being illustrated by a diagram. The causes of subcoracoid dislocation, as illustrated in the twenty-seven cases in Table 1, were as follows: Direct falls upon the shoulder in eleven, upon the elbow in four, upon the hand in five; while in seven cases the cause is of exceptional or doubtful nature. Symptoms: The arm was elongated in ten, unaltered in six, and shortened in eleven; the greatest elongation being one inch, the greatest shortening seven-eighths of an inch. The vertical circumference of the shoulder was increased in all. The elbow in every case projected more or less from the side, was directed backwards in eight, forwards in nine, and in the middle line, or in a position not recorded, in ten. The arm was rotated somewhat inwards in seventeen, outwards in three, and either unchanged or not recorded in seven. In about half the cases the head of the bone was felt in the

axilla, without moving the arm from the side; in the other half, only after the limb was abducted; but in all the head of the bone was felt through the anterior wall of the axilla, either immediately or not more than half an inch below the coracoid process, the only real diagnostic sign of this injury. 3. *Subclavicular.*—"The head of the os humeri placed below the middle of the clavicle, and on the sternal side of the coracoid process." The frequency of this form of dislocation has been much overrated in consequence of the subcoracoid not having been recognized as a common variety. A dislocation that was not subglenoid was supposed necessarily to be subclavicular. The cases in which the position of the bone exactly corresponds with the above definition of Sir A. Cooper must be very rare indeed, although there are a sufficient number on record to prove the existence of this as a distinct variety. There is no preparation in any of the London museums which shows it. In conclusion, the author stated that all original and unbiassed observation seemed to point to the subcoracoid as the typical position of the head of the bone in traumatic dislocations of the humerus, and a general recognition of this fact would, in his opinion, be an important step in the process of eradicating many of the difficulties and errors in which the pathology, both of the injuries and diseases of the shoulder-joint had hitherto been involved.—*Med. Times and Gaz.*, June 23, 1860.

35. *Extreme Relaxation of all the Ligaments of the Left Knee-Joint, consequent on Chronic Inflammation.*—Prof. HARGRAVE relates (*Dublin Medical Press*, July 11, 1860) the following remarkable example of this:—

"A servant, aged 51, was admitted into the City of Dublin Hospital in May, 1858, with loss of power of the right inferior extremity. He was treated principally for the local symptoms by moxas applied along the sciatic nerve, which, after some time, afforded so much relief that he recovered power over the muscles, but it was feeble, still better than when admitted into hospital. After being in the house for some time he was attacked with chronic inflammation of the left knee-joint, implicating chiefly the ligaments, and terminating in the formation of abscesses, which extended to the posterior part of the leg. These were opened, to which succeeded a very severe and prolonged attack of deep-seated diffuse inflammation of the cellular membrane of the limb with the formation of large collections of matter between the gastrocnemii muscles, which required to be freely opened. During this attack a very remarkable set of symptoms made their appearance—general relaxation of *all* the ligaments of the left knee-joint. To such an extent did this take place that the leg could be flexed anteriorly to a right angle with the thigh, and to the same angle either by abducting or adducting the leg. No pain whatever was referred to *any* of the ligaments or to the joint. This very extreme and insidious condition of the articulation was met by every appliance that could be availed of to maintain the limb *in situ* when in bed, but of very little benefit when the man was in the erect position; in fact, the limb was useless as a means of progression. He was under treatment for this affection for over three months, when he left the hospital in every other respect in good health, with recovery from the paralytic state of the right limb and perfect use of it. During the treatment for this condition of the left knee, I would have availed myself of the veterinarian practice—namely, firing all round the joint, but did not consider that it would have in any way benefited ligaments so deep-seated as the crucial ones, and covered by so great a thickness of soft parts as the ligamentum posticum, all of which were relaxed to an extreme degree when such unusual positions could with painless facility be given to the leg. I have made repeated inquiries after this patient, and have not been able to learn anything positive about him."

36. *Amputations at the Hip-Joint.*—M. JULES ROUX gives an account (*Gaz. Hebdom.*, 1860, Nos. 18, 19) of six amputations at the hip-joint which have been recently performed at Toulon, four of these being followed by success. He also refers to six other cases which have occurred to other officers of the French marine, making in all 12 cases, with 7 deaths and 5 recoveries. Of these, 5 were immediate or primary (some hours or days after the accident), and all fatal; 4 mediate or secondary (several months after the accident or the disease), 3 re-

covering and 1 dying; and 3 ulterior or consecutive (one or more years after the accident or disease), 2 recovering and 1 dying.

In the latter part of his paper, M. Roux adduces the recent evidence of the French military surgeons, in proof of the almost invariable fatality of immediate hip-joint amputations, and the frequent triumphs of conservative surgery in gunshot injuries of the upper third of the femur. Indeed, he gives a list of 21 cases of this injury examined at his own hospital at Toulon since the Italian war, in all of which consolidation of the fracture had taken place. Not one of these men would have survived had primary disarticulation of the femur been performed; and in only one instance of the number, six months after the occurrence of the injuries, had secondary hip-joint amputation become necessary. With respect to gunshot fractures of the lower two-thirds of the femur, in spite of cases of cure without operation, all statistics prove that amputation is more successful than abstaining from it. The general conclusions are: 1. That gunshot fracture of the upper third of the femur is an exception to the law which requires amputation, after all gunshot injuries of this bone. 2. That several months after gunshot wound of the femur, when the necessity for an operation has become obvious, amputation at the hip-joint should be preferred to that of contiguity, whatever portion of the bone may have been fractured. The longer the operation can be safely delayed, the greater are the chances of recovery.—*Brit. and For. Med.-Chir. Rev.*, July, 1860.

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37. *Treatment of Congenital Imperfections of the Rectum by Operation.*—Mr. T. B. Curling read before the Royal Med. and Chirurg. Society (June 26th, 1860), a paper on this subject founded on an analysis of 100 cases, 9 of which occurred in the practice of the author. With the view of ascertaining and estimating the results of the operations which have been resorted to in the different forms of congenital imperfections of the rectum, either for the preservation of life or its future comfort, and of assisting to establish the best modes of proceeding in these cases, the author has collected and tabulated 100 cases in which operations have been performed by himself and other surgeons. Of these cases, 68 were males and 32 females. He classes the congenital malformations of the rectum as follows: 1. Imperforate anus, the rectum being partially or wholly deficient.—Of this form the table furnishes 26 instances, 21 males, and 5 females. 2. Anus opening into a cul-de-sac, the rectum being partially or wholly deficient.—Of this the table includes 31 cases, 17 males and 14 females. 3. Imperforate anus in the male, the rectum being partially or wholly deficient, and communicating with the urethra or neck of the bladder.—Of this the table contains 26 cases. 4. Imperforate anus in the female, the rectum being partially deficient, and communicating with the vagina.—Of this the table furnishes 11 cases. 5. Imperforate anus, the rectum being partially deficient, and opening externally, in an abnormal situation, by a narrow outlet.—Of this form the table contains 6 cases. A few other congenital deviations have been observed, but they are of very rare occurrence, and the five forms enumerated above are alone included in the table. The author briefly relates a case of fecal fistula, passing from the back of the sacrum to the rectum, which fell under his own observation. After briefly reviewing the causes of these malformations, and showing that, though in most instances consequent on an arrest of development, they sometimes result from a pathological change due probably to inflammation occurring during intra-uterine life, the author notices the relations of the peritoneum to the bowel in the different forms of atresia, as having an important bearing on the operations performed in the perineal region, and states that in several instances in the table the fatal result was due to the opening made in the serous sac. He also calls attention to an imperfect development of the pelvis in those cases in which the rectum is wholly deficient. 1. The 26 cases in the table of the first form furnish the following results: In 14 cases the gut was opened in the anal region, and in 12 the operator failed to reach it. Of the former, 9 ended fatally and 5 proved successful. Of the 12 cases in which the gut was not reached, 2 ended fatally without anything further being done. In 7, colotomy was performed in the groin; 1 only proved fatal. In 3, the colon was opened in the lumbar region; 1 recovered and 2 died. The author gives some particulars of the 5 successful

cases, and notices that there is only 1 of complete success in which the rectum was wholly wanting. In 3 of the cases in which the bowel was simply incised, more or less difficulty was experienced afterwards in maintaining a free passage for the feces, but in 2 of the cases subsequent contraction was prevented by drawing the bowel down to the anal region. 2. In 16 of the 31 cases of the second form the gut was reached and opened. In 11 the operator failed in finding it. Of the former, 6 were fatal and 10 recovered. Of the 11 cases in which the gut was not reached, 6 ended fatally without any further operation. In 2, colotomy was performed in the groin with a fatal result. In 3 instances the colon was opened in the loin; 2 were fatal and 1 recovered. In 4 cases colotomy was performed without any previous subpubic operation; three times in the groin with successful results, and once in the loin with a fatal termination. In analyzing the 10 cases of success after a subpubic operation, the author shows that in several cases in which the septum was slight the passage was readily established; that in others, where a space of some extent intervened between the two ends of the bowel, great difficulty was experienced in preventing contraction, unless the bowel was drawn down and attached to the skin, and he gives the particulars of a case treated by himself in this way with complete success. 3. The author adduces some cases of the third form, in which the communication between the rectum and urethra being more free than usual, life has been preserved for many months, the feces escaping entirely by the urethra, until the passage becoming at length blocked up, death has ensued. Of the 26 cases in the table the gut was reached in 15; in 9, the operator failed to find it. Of the former, 9 recovered and 6 proved fatal. Of the 9 cases in which the gut was not reached, 7 ended fatally without any further operation. In 1 colotomy was performed in the groin, in the other in the loin; both ended fatally. In 2 cases no attempt was made to reach the bowel from the perineum, but the colon was opened in the loin. One did well, the other died. In 7 of the successful cases treated by incision more or less difficulty was experienced afterwards in maintaining the passage. In the only case in which the bowel was drawn down and secured to the skin no contraction took place, and the boy was well and thriving at five years of age. After the establishment of a passage at the anus the escape of feces by the urethra did not always cease, and several instances are given in which serious inconveniences resulted from non-closure of the abnormal communication. 4. The author, after alluding to instances of persons born with imperforate anus, the rectum opening into the vagina, who have passed through life submitting to the annoyances consequent upon it, states that the recto-vaginal communication is not always sufficient, and that obstinate constipation sometimes ensues. As the rectum descends low in the pelvis in this form, the operator cannot well fail to reach the bowel. In all the 11 instances in the table the gut was opened, and only 1 ended fatally, from over-distension of the rectum, consequent on the operation having been delayed too long; 8 of the 10 remaining cases are reported as successful, and 2 as unsuccessful, owing to the tendency to contraction and neglect by the parents of the means recommended to maintain the passage. In one of the successful cases the bowel was drawn down and secured to the skin. The author gives the particulars of two cases which came under his notice, one successful, the other unsuccessful. In this malformation the establishment of a new passage at the natural site is not all that is required. We have also to obtain the closure of the abnormal communication with the vagina. A case in which this opening is reported to have closed spontaneously is the only one of complete success in the table. The author is unacquainted with a single case in which, after the formation of an artificial anus, a successful operation has been performed for the closure of the recto-vaginal aperture. 5. Of the fifth form there are 6 cases in the table—4 males and 2 females. In the males the abnormal outlet was in the perineum, just behind the scrotum, in 2, in 1 in the scrotal raphe, and in 1 anterior to the scrotum. In the females the opening was in the perineum, close to the vagina, or at the posterior commissure of the vulva. In all the cases the vent was insufficient, and defecation more or less difficult. In this form, as in the last, the rectum can be easily reached, and it was opened in all six cases. Two different operations have been practised to remedy this imperfection: 1, the enlargement of the original outlet,

which was done in two instances; and 2, the establishment of a new anus at the natural site, which was performed in the four other cases. The author, after giving a detailed account of one of the cases in which he had recourse to the latter operation, contrasts the advantages of the two methods. In cases of imperforate anus, in which a passage is successfully established, the retentive functions of the bowel generally exist in sufficient force. Satisfactory evidence on this point is furnished by several of the cases in the table, and the existence of an external sphincter has been frequently recognized in dissection. The author, after noticing that in cases of imperforation unremedied by operation, death is sometimes caused by extreme distension and rupture of the colon or the terminal pouch, remarks, that the most common causes of death after operation are peritonitis and diffuse inflammation of the areolar tissue. The former is generally produced by a wound of the serous membrane, the latter by the passage of fecal matter through the tissues of the pelvis, both being chiefly due to faulty methods of operating. He condemns the use of a trocar as a most unsafe instrument, and advocates the plan of drawing down the bowel and attaching it by sutures to the margins of the wound in the skin, an operation first performed by Amussat in 1835, and since described and recommended by Dieffenbach. The important advantage obtained by it is the securing a lining of mucous membrane for the passage traversed by the feces. By this means we guard, not only against the tendency to contraction, with its consequent miseries and dangers, but also avoid the early risks of inflammation and fecal absorption. In some instances troubles in defecation have continued after a sufficient passage for the feces has been fully established, owing to an organic change in the bowel, consequent upon an obstruction of long continuance, subsisting after the removal of the cause. The author gives an account of some dissections in which the muscular coat of the rectum was found remarkably hypertrophied and its mucous follicles enlarged, and states that when the vent for the feces has long remained insufficient, and the bowel has undergone these changes, its expulsive functions become seriously impaired and weakened, and the infant consequently suffers in the same way as adults labouring under stricture of the rectum. Having investigated the results of the operations performed in the perineum, the author proceeds to inquire into the degree of success which has followed the operations for opening the colon in the groin and in the loin, to ascertain the inconveniences consequent upon an anus in these regions, and to estimate the comparative value of the two operations. Colotomy was performed in 21 of the cases in the table —in 14 by the inguinal operation, and in 7 by the lumbar. In 9 of the former an unsuccessful attempt had been made to reach the gut from the perineum—4 proved fatal, and 5 recovered. Of 5 cases in which no previous operation had been performed, 1 only proved fatal, and 4 recovered. Of the 9 recoveries after inguinal colotomy, 1 survived only a month, 2 died of cholera within fourteen months, and a fourth was doing well at seventeen months; a fifth survived three years, and a sixth was doing well at thirteen years of age. M. Rochard has recently given an authentic report of the remaining three. One died at the age of 43; the two others are alive and well—one at 46 years of age, the other at 43. Of the 7 cases in which colotomy was performed in the left loin, attempts had previously been made to open the bowel from the perineum in 5, of which 3 were fatal. In another fatal case an attempt was made after the lumbar operation. The author relates the particulars of a case operated on by himself, in which death was caused by injuries inflicted in the perineal operation before the infant came under his care. Of the two recoveries after lumbar colotomy, one infant lived to the age of 7 years, and of the other there was no report more recent than seven weeks, and the child is supposed not to have long survived. The author considers the two operations in reference chiefly to three questions —the difficulties of the operation, its dangers, and the condition and convenience of the artificial anus. The operation is admitted to be one of greater difficulty in the loin than in the groin; and after remarking on some of the causes of this, the author notices the irregularities in the disposition of the colon, which render it impossible to open the bowel in the left loin without wounding the peritoneum, and which prevent the operator finding the colon in the left groin. The author practised both operations on the bodies of twenty infants, and in two he was

unable to open the colon in the left groin, in consequence of the colon making a sharp curve and passing over to the right side before reaching the pelvis. In six subjects lumbar colotomy was impossible without opening the peritoneum, owing to the colon being attached by a distinct mesentery and being loose in the abdomen. This serious impediment once occurred to the author in performing lumbar colotomy in a case of imperforate anus. In respect to the dangers of the two operations, the results of the cases in the table are much in favour of colotomy in the groin. The author quotes the description given by Rochard of the condition of the anus in the groin in two patients, who had been operated on many years previously. Both were in good health, and suffered very little inconvenience. One had married and borne children. In all the patients observed by Rochard, prolapsus had taken place from the lower part of the bowel, but it was easily restrained. The author also gives a particular description of a case, which has recently come under his own notice, of an artificial anus in the loin in a boy eight years of age, born with an imperforate anus, the rectum opening into the urethra. The anus was sufficient, but feces escaped occasionally into the lower part of the bowel and caused difficulty in micturition. To obviate this difficulty, he had suggested the lodgment of a sponge-plug in the lower opening. The author sees very little to justify a preference for either operation on the ground of the position of the anus; but the greater difficulties and dangers of lumbar colotomy would induce him in future to select the inguinal operation. The author controverts the views recently advanced by Nuguier in favour of the performance of colotomy in the right groin in preference to the left, and shows by several examinations of infant subjects that the passage of the colon from the left iliac fossa to the right fossa is not so constant as he states. The author, in conclusion, gives particular directions for conducting the operative treatment of imperfections of the rectum based on the results of this inquiry.—*Med. Times & Gaz.*, Aug. 18th, 1860.

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38. *Treatment of Hæmorrhoids.*—M. NÉLATON, in a recent clinical lecture, makes the following remarks:—

"I was some time since a great partisan of the actual cautery in hæmorrhoids, at least since it could be employed under conditions formerly impossible. In fact, nothing can be more painful than its application. I have seen cauterization employed many times by Dupuytren, who first excised the tumour and then cauterized; but so terrible were the sufferings of the patients, that I could scarcely have made up my mind to have recourse to it, had not the means of preventing pain by chloroform been discovered. I have since then frequently had recourse to cauterization with the best results; and if I do not employ it now it is because we have at our disposition another operative procedure, which is just as good, and which is not painful either during or after its application. I mean *écrasement linéaire*. It is usually unattended with hemorrhage, and when, as is sometimes the case, there is a certain amount of bleeding, this may at once be arrested by means of a powerful hemostatic, the perchloride of iron. The union of these two means, then, constitutes an excellent method for the ablation of hæmorrhoids.

"One word about ligatures. All surgeons at the end of last century and the beginning of the present were very fearful of applying them, owing to an instance of fatal hemorrhage which occurred after the application of the ligature by J. L. Petit. I believe I am right in affirming, guided by the cases related by Amussat, and by those which have occurred in my own practice, that these surgeons entertained the most erroneous notions concerning the results of the ligature employed for hæmorrhoids. It is an excellent operation, by means of which patients may be cured in eight or ten days without any accident; and, indeed, I may place it on the same line with *écrasement linéaire*. The latter has, however, the indubitable advantage of causing the fall of the tumour within a few minutes, although perhaps it offers somewhat less security against hemorrhage.

"There is one thing to be well borne in mind—viz., that all these operations practised in the vicinity of the anus, however simple they may be in appearance, may terminate in a fatal manner. This is a powerful motive for insisting

as long as possible on palliative treatment, only performing an operation as a last resort. Quite recently, one of our leading surgeons applied a small portion of Vienna caustic to a hæmorrhoidal tumour, and the patient was dead next day; while in another case, an incision made into a fistula scarcely a centimetre in length, was followed in a few days by fatal purulent infection. I was myself consulted some years since by a man who, having acquired great wealth, complained bitterly of not being able to enjoy it in consequence of a hæmorrhoidal tumour. I advised him to bear with it, but some time after abundant hemorrhage having come on, he entreated its removal. He manifested all the signs of complete anæmia. He was put under the influence of chloroform, and the actual cautery was employed. He did not suffer during the operation, but scarcely had he recovered consciousness when he complained exceedingly. I appeased the pain and all seemed doing well, when on the sixteenth day violent shivering ushered in purulent infection, and he died. The conclusion to be drawn from all this is, that you should never operate except when you cannot possibly avoid doing so, since when you least suspect it you may meet with sinister events similar to those just adverted to.

"One more word with respect to *écrasement linéaire*. This operation has during some time been frequently resorted to; and it is for this description of tumour it is perhaps best adapted. But I ought to inform you that in most cases the operation is badly executed. For a short time after its performance the patients are delighted, and the surgeon believes that he has attained a splendid result; but in the course of a few months the cicatricial tissue contracts, and the patients suffer from an anal stricture. During about a twelvemonth I have had a great number of patients, who have come to me in order to undergo an operation for the relief of this unfortunate consequence of removal of hæmorrhoidal tumours—the stricture sometimes scarcely admitting the passage of a quill. It has arisen because not only the mucous projection which alone constitutes the disease has been removed, but also a more or less considerable portion of the skin of the orifice of the anus."—*Brit. and For. Med.-Chir. Rev.*, July, 1860, from *Gazette des Hôpitaux*, 1860, No. 23.

39. *Salivary Calculus in a new-born Child.*—M. Jules Cloquet read to the Academy of Sciences an account of a case of this, which had been communicated to him by Dr. Burdel, of Vierzon. A child, three weeks old, was taken to Dr. B. by the mother, who said that her infant could not suck, and requested that the frenum liguæ might be cut. On examination, Dr. B. found the frenum sufficiently free, but he observed that the tongue was considerably raised up by an excessive enlargement of the submaxillary gland. On careful examination he detected the presence of a salivary calculus, which he removed, after which the child took its mother's breast readily.—*Gazette Médicale de Paris*, 26 May, 1860.

OPHTHALMOLOGY.

40. *Glaucoma and its Surgical Treatment.*—Mr. J. W. Hulke read a paper on the subject before the Royal Medical and Chirurgical Society, June 26, 1860.

The author refers to a paper "On the Morbid Anatomy and Pathology of Glaucoma," communicated by him to the Society in December, 1857. Since then, the treatment of glaucoma by "iridectomy" has been extensively practised in the Royal London Ophthalmic Hospital and in private, and the results have been so very successful that the author is desirous of bringing the operation under the notice of the Society. In order to prevent any misunderstanding respecting the nature of the cases in which he advocates the performance of iridectomy, Mr. Hulke gives an outline of the symptoms, the ophthalmoscopic signs, and the morbid anotomy of glaucoma. There are two forms of this disease—an acute, and a chronic; but many cases have an intermediate character.

In 75 per cent. or more of all cases, the active stage is preceded by a premonitory period—"prodroma." In acute cases the transition is abrupt; in chronic cases it takes place by insensible gradations. *Premonitory symptons.*—Rapidly increasing presbyopia; the appearance of a coloured halo round the flame of a candle; the spontaneous appearance of flashes and other spectra. Intercurrent obscuration of vision, attended with vague orbital and frontal pains, slight hardness of the eyeball, and contraction of the field of vision. The pupil is large and sluggish; the size of the anterior chamber is much diminished. The duration and intensity of these symptoms are very variable, but they are rarely absent. *Acute Glaucoma.*—The active stage sets in as a sudden and violent outbreak, often at night. Violent racking pain in the eyeball, often attended with sickness, and followed by rapid extinction of sight. The pupil is widely dilated and motionless; and the lens has sometimes the peculiar greenish tint which was formerly considered so characteristic. The ciliary vessels are swollen; the conjunctiva is red and often chemosed; the globe is very hard; the cornea is dull, and its sensibility is lowered. Remissions are followed by fresh paroxysms, and complete irremediable blindness always ensues. *Chronic Glaucoma.*—The premonitory period slowly glides into the active. The obscurations, which were at first evanescent and separated by long intervals, become more frequent, and last longer. The contraction of the visual field progresses. The tension of the globe increases. The iris becomes dull; the aqueous humour turbid; the cornea dimned and flattened. Mr. Hulke lays stress on the flattening of the cornea, which is easily demonstrated, because it has been recently stated that the cornea becomes conical in glaucoma. *Ophthalmoscopic Signs.*—Excavation of the optic nerve entrance, and pulsation of the retinal vessels. To these capillary apoplexy of the retina is often added; and sometimes there are small bloodclots in the vitreous humour, which is unnaturally firm. It is only late in the disease, when all the component structures are undergoing atrophy, that the vitreous humour becomes fluid. *The Nature and Causes of the glaucomatous Process.*—All the leading features of the glaucoma are due to excessive tension of the eyeball from a superabundance of fluid within it, which distends the vitreous humour. This fluid—serum—is derived mainly from the choroid. Many circumstances show that the retina is only passively concerned. Glaucoma might be considered a serous choroiditis. Mr. Hancock has advanced the theory that spasm of the ciliary muscle forms an essential part of glaucoma. The author has, however, found complete atrophy of this muscle in dissections of glaucomatous eyes; hence the inference that this muscle is concerned in maintaining the glaucomatous condition. The author has been unable to trace any connection between glaucoma and gout or rheumatism. Some other diseases and injuries of the eyeball occasionally assume a glaucomatous type. This is especially the case with wounds of ciliary region and sclerotico-choroidal staphyloma. *Treatment.*—Generally the age and broken health of the subjects of glaucoma forbid antiphlogistics; venesection is inadmissible; leeches and counterirritants are useful as adjuncts, but cannot alone cope with the disease. The excessive tension of the globe is suggestive of the evacuation of some of the superabundant fluid by tapping. The old Surgeons, Antonius, Nerck, Jobus á Meckren, and others, were familiar with this operation, but they practised it chiefly in hypopion, onyx, and hydrophthalmos. Wardrop (*Med.-Chir. Trans.*, 1813) tried it extensively. With a view to lessen fulness and congestion, he tapped the anterior chamber in superficial and deep-seated inflammations of the eye. The operation was at first warmly taken up by other surgeons, but soon fell into disuse. In our own day it has been strongly advocated by Desmarres, but it has found little favour with English Surgeons, though most have occasionally performed it. In glaucoma the relief that paracentesis corneæ affords is too transient to render it of much value. Paracentesis scleroticæ has been practised by Desmarres and Hancock in glaucoma, though with different objects. Mr. Hulke reverts to this, after fully describing the operation of iridectomy as proposed by Dr. A. von Graefe. *Iridectomy* consists in excising a segment of the iris, in its whole breadth, from the pupillary margin outwards to its insertion. This is effected through an opening of corresponding size at the extreme edge of the anterior chamber. Iridectomy may be practised at any part of the iris.

Graefe usually makes it outwards; but adds that, when desirable for the sake of appearance, it may be made upwards. This latter position has been adopted by Mr. Bowman, and is that which Mr. Hulke has generally chosen. By removing the iris in this manner, the pupil is at once enlarged up to the corneal incision, which forms, as it were, the base of a coloboma iridis, and the edge of the lens, with the suspensory ligament, stretching in front of the vitreous humour and the ciliary processes, are exposed to view. The little blood which oozes into the anterior chamber from the cut edges or surface of the iris, should be at once pressed out or removed with a scoop. The after-treatment is very simple. A light compress may be applied for a short time as a precaution against hemorrhage. This may be replaced after an hour or two by a piece of wet rag. The room should be shaded. Usually nothing else is necessary. At first the aqueous humour trickles away; but the corneal wound soon heals, and the anterior chamber fills again. The hardness of the eyeball is at once lessened, and a natural tension is gradually attained; the pain abates, and soon altogether disappears. As regards vision, the ultimate results are intimately dependent on the period at which the iridectomy is performed, being more perfect where it has been early undertaken than where it has been postponed. In the premonitory period, where the symptoms are well marked, the propriety of operating cannot be doubted. In acute glaucoma, where the operation is done during the first inflammatory attack, or soon afterwards, vision is very completely restored. In chronic glaucoma, the results are less uniform and less decided. This is in consequence of the insidious nature of the disease—structural changes in the retina creeping on *pari passu* with the gradually increasing tension. *Alleged Objections to Iridectomy.*—1. Its reported uniform failure in the hands of some surgeons. This is in great probability to be generally attributed to its having been practised in cases which were not true instances of this disease. Many failures have proceeded from its having been done at far too late a period. 2. The great difficulty of the operation. This has been much magnified. It does not require more skill than most surgeons possess, and when chloroform is used it becomes really a simple matter; but even were it difficult, which it is not, in the absence of other known means of cure, we should be no more justified in rejecting it on this account, than we should be in refusing a patient the benefit of herniotomy where the taxis and other measures had failed. 3. The disfigurement produced by the coloboma iridis is so slight that it cannot constitute a real objection. 4. Its supposed injurious action on accommodation. Further experience has corrected some misimpression which at first prevailed respecting its influence on the adjustment of the eye. The previously existing presbyopia is not increased by removal of a portion of the iris; indeed, the refracting power of the globe sometimes actually increases after iridectomy—probably, as Graefe has shown in consequence of the flattened cornea resuming its natural curvature. To avoid these alleged disadvantages, paracentesis scleroticæ has been advocated by Middlemore, Desmarres, and Hancock, as a substitute for iridectomy. Middlemore proposed to evacuate the turbid, diffluent, vitreous humour with a grooved needle, and to replace it with a syringeful of clear water. But, except in very old cases, the vitreous humour is much too firm to flow out along a grooved needle; and probably few English surgeons would adopt Desmarres' suggestion, of introducing a probe and breaking it up. Mr. Hancock, considering a spasm of the ciliary muscle to be an essential part of glaucoma, divides this muscle by striking a knife through the ciliary region backwards and inwards towards the axis of the globe. But Mr. Hulke has demonstrated, by microscopical examination, advanced atrophy of this muscle in many glaucomatous eyeballs; whence it follows that the ciliary muscle is not actively concerned in maintaining the glaucomatous process. In all probability, the success of Mr. Hancock's operation is solely due to the draining away of some of the superabundant fluid. According to this view, it is simply a peculiar mode of paracentesis, and cannot rank as a substitute for iridectomy until it has been thoroughly established that it permanently relieves excessive intra-ocular tension, which, in common with most surgeons, Mr. Hulke has found that tapping the vitreous humour fails to do.—*Med. Times & Gaz.*, July 21, 1860.

41. *On Glaucoma and the Optic Papilla.* By WILLIAM MACKENZIE, M. D., of Glasgow.—I long since[1] established to my own satisfaction the three following conclusions regarding glaucoma:—

1st. That the sea-green appearance behind the pupil, whence the name arose, does not depend, as was once generally supposed, on any thickened or discoloured condition of the vitreous humour, but on a diplochromatic state of the crystalline, by which it absorbs the extreme prismatic rays, and reflects the middle ones.

2d. That the vitreous fluid in glaucoma is superseded by an unhealthy secretion, which over-distends the eye, makes it feel hard, causes severe pain by pressing on the ciliary nerves, and obliterates the sensibility of the retina; a state of matters which I found to be susceptible of relief by paracentesis of the eye, through either the sclerotica or the cornea.

3d. That in advanced cases, the optic nerve behind the eye shows itself, on dissection, in a state of atrophy, deprived more or less of its proper nervous substance, and flattened.

Ophthalmoscopic investigations have added some new facts to our knowledge of glaucoma. One of these is the pulsation of the arteries of the retina; and another, the concave or excavated state of the papilla of the optic nerve. Neither of these phenomena, however, is peculiar to glaucoma; both of them being occasionally met with in other diseases of the eye. The former of them seems to indicate an increased resistance to the flow of blood in the vessels which supply the retina; the latter may be regarded as the effect of one or other, or both, of two different causes, namely, the atrophied condition of the optic nerve, and the increased pressure on the internal parietes of the eyeball, from the superabundant secretion which occupies the place of the vitreous humour.

These phenomena can scarcely be discerned in the advanced stages of glaucoma, owing to the diplochromatic and muddy state of the crystalline. To see them, then, the student should be directed to examine a case, in which the dioptric media have as yet lost but little of their normal colour and transparency.

To discern the pulsatory movement of the vessels, requires a sharp and experienced eye, and the observer will find it of service, while directing his attention to this point, to have the patient's head supported, and the diseased eye steadied by the fingers of an assistant.

If the indirect or inverted method of ophthalmoscopic observation be selected, an optical deception is apt to bewilder a beginner, as to the condition of the entrance of the optic nerve, a nearly circular spot, though not unfrequently oval, variable in size, but measuring on an average 0·6 line in diameter, and which, although styled *papilla* or *colliculus*, is, in its normal state, nearly level with the retina, and even a little depressed in its centre. In the direct method, where the observer regards the illuminated non-inverted fundus oculi through an aperture in a concave mirror, without the aid of any extraneous lens, the great magnifying power of the cornea and humours of the patient's eye, gives to the papilla an apparent magnitude larger even than that of the pupil; but in this way, it cannot be well seen as a whole, and generally requires the eye of the observer to be brought inconveniently near to that of the patient. Instead, then, of using the patient'e eye as a powerful single microscope, in actual contact with the objects on the fundus oculi to be examined, and thus viewing them directly, it is better to obtain a smaller but more defined image, although an inverted and virtual one, of those objects, by converting the patient's eye for the time into the object-glass of a compound microscope, which we do by holding in front of it a thick convex lens. The image which we then see of the several parts of the fundus oculi is an inverted one, like that of an object examined with an ordinary compound microscope; the entrance of the optic nerve is seen towards the temple instead of the nose; the macula lutea appears to the nasal side of the optic nerve instead of the temporal, and a little below the level of the nerve instead of above it; while the principal trunks of the retinal vessels, instead of branching in the direction of the temple to embrace the macula lutea, seem to bend to-

[1] See a paper "On Glaucoma," in Glasgow Medical Journal for August, 1830, and the different editions of my "Practical Treatise on the Diseases of the Eye."

wards the nasal side of the eye. The apparent position, in fact, of all the objects on the fundus, viewed in this way, is the reverse of their real position.

The most important optical deception which arises from viewing the fundus in the indirect method, as well as the most puzzling to a beginner, affects the papilla. The student has probably heard, that the papilla, in the glaucomatous eye, is cupped or excavated, but to his view it appears quite the reverse, it appears rounded and prominent.

To comprehend clearly that this is an illusion, all that one requires to do, is to impress with the head of a pin, a small dimple on a bit of paper, and put this under a compound microscope, with the concave side of the impression uppermost. The same appearance will then be seen, which is presented by the papilla of the glaucomatous eye, namely, that of a rounded and protuberant surface.

This optical deception arises from the inversion which the image suffers by being viewed through the compound microscope. We judge that an object, viewed with a single eye, is convex or concave, solely by the manner in which light is reflected from the body under examination. The light which falls obliquely on a convex surface illuminates that side which is nearer to the source of light; the side further from it is in shade. The light which falls obliquely on a concave surface illuminates that side which is farther from the source of light; the side nearer it is in shade. Let the source of light remain in the same position, but invert the image of the object illuminated, so that the light which falls on the farther side of it may seem to fall on the near side, which is the case when we look through the compound microscope at the hollow on a bit of paper, or when we examine the optic papilla through the compound microscope formed for the occasion by the patient's eye *plus* the convex lens held in front of it; and both the dimple on the paper and the papilla, although they are actually cupped or concave, will then appear convex and prominent.

If, on the other hand, we turn the convex side of the dimple on the paper uppermost, and view it with the compound microscope, it appears concave. The inversion of its image causes the light which falls on its near side to appear as if it fell on its farther side, and thus the eye is subjected to a deception the reverse of the former, and from which it cannot free itself. If there be cases, then, in which the end of the optic nerve within the eye actually projects in a convex form, they will offer, when examined in the indirect method, the appearance of a cup or depression.

Such facts have long been familiarly known; the apparent transmutation of an intaglio into a cameo, or that of a cameo into an intaglio, under the compound microscope, being a common source of amusement, fully discussed by Sir David Brewster in his *Letters on Natural Magic*, Letter V. Important as their bearing is on pathological examinations of the eye, they seem to have escaped the notice of ophthalmoscopists, till attention was directed to the subject by Dr. A. Weber, in a paper in the *Archiv für Ophthalmologie*, Band II., Abtheilung I., Seite 141.

In a highly interesting communication in the same journal (Band IV., Abtheilung II., Seite I.), Dr. H. Müller has directed attention to the normal, as well as to several diseased states, of the optic papilla.

His account of the entrance of the optic nerve into the eye, and the diagram which he gives in illustration, tally remarkably with the thirteenth figure in Mr. Bowman's "Lectures," and the corresponding explanation. From the statement and figures of these two observers, especially those of Dr. Müller, it may be gathered that the lamina cribrosa is normally somewhat concave towards the interior of the eye; that the fibres of the optic nerve, suddenly losing their white substance and dark outline, enter the eye on a level with the chorio-capillaris; that at this point the whole nerve, from the change which its fibres have just undergone, is considerably and rather suddenly reduced in thickness; that the fibres, bending more or less abruptly outwards, and spreading around, become clothed by the exterior or radially disposed layers of the retina; that the edge of the opening through which the nerve passes into the eye, as well as the fibres themselves as they traverse that edge, form a slight elevation or approach to a papilla, leaving in the situation where the trunks of the central vessels of the retina generally make their appearance, a small foveola.

Dr. Müller points out the difficulties which attend the anatomical examina-

tion of this depression, arising from the softness of the part, and its liability to change on being touched; and shows how these difficulties may best be obviated. He directs attention to the varieties which exist in different individuals; varieties in the depth of the depression, from 0.2 to 0.5 millimetre; varieties in its form and position, for it is not always symmetrical, and does not always correspond to the middle of the nerve, but is sometimes considerably nearer to the macula lutea, or has one portion of its edge more raised than the rest; varieties in the disposition of the vessels, for while the large trunks generally emerge from the middle of the foveola, one or more sometimes seek a passage for themselves close to the edge of the chorio-capillaris, so as to make their appearance by the side of the nerve; facts, all of which should be carefully borne in mind by ophthalmoscopists.

In regard to abnormal prominence of the papilla, Dr. Müller shows, that this is likely to arise from an atrophied state of the exterior layers of the retina, a thickened condition of the primitive nervous fibres, as well as infiltration of the nerve by blood, inflammatory exudation, or new formations. He relates a case in which a concretion in the site of the lamina cribrosa caused a protuberance of the papilla. The very earliest stage of encephaloid tumour should show an abnormal prominence of the papilla.

On the other hand, intro-ocular pressure, and atrophy of the nerve, existing either singly or in combination, are the causes of abnormal excavation of the papilla. In cases of intra-ocular pressure, either simple, or combined with atrophy of the nerve, paracentesis, either corneal or sclerotical, is likely to produce a change in the depth of the excavation, sufficient to be recognized on ophthalmoscopical examination.

Morbid excavation of the papilla varies in depth, reaching in extreme cases to a millimetre beyond the level of the choroid. In such cases the sides of the excavation are nearly perpendicular, or are even concave, and its edge, of course, impendent, so as partially, or even completely, to hide from view the course of the vessels as they pass from the bottom of the excavation and over its edge to the retina. In slight cases, the sides of the excavation are convex, and its form that of a funnel. The lamina cribrosa, under such circumstances, keeps its place, but in more advanced stages it is pushed back, and the excavation is much extended laterally. Such extreme cases of expansion are not the result of uncombined atrophy of the nerve, but must arise from the supporting resistance of the parts being weakened by previous inflammation, whence they come to yield more readily to intra-ocular pressure.—*Ophthalmic Hospital Reports and Jour. of the Royal London Ophthalmic Hospital*, No. XI.

MIDWIFERY.

42. *Delivery of a Living Child weighing upwards of eighteen pounds.*—Dr. A. MEADOWS, Assistant-Physician Accoucheur to King's College Hospital, relates (*Med. Times and Gaz.*, Aug. 4, 1860) the following remarkable case:—

"I was called on the 13th instant at 10 A. M. to Mrs. K., aged 35, who was in labour with her second child. She stated quite positively that she was at least a fortnight over time; and she fully expected to have twins, as she was such an enormous size, and had been greatly inconvenienced thereby for the last month. Fœtal movements had sometimes been so strong as to be quite painful.

The present labour began at 6 A. M., with pain which regularly increased up to the time of my visit. The membranes were still entire. On examination I found the parts soft; the os uteri dilated to about the size of a shilling, but I could not make out the presenting part, the child being still very high. By the abdomen I believed I detected the head at the fundus, with the back of the child looking forwards. Auscultation gave distinct evidence of fœtal life, for, notwithstanding Dr. Adams's disbelief in the use of the stethoscope in pregnancy, I am still disposed to have some faith in my own ears.

I left the patient, desiring to be sent for should any urgent symptoms arise. At 10 P. M. I made another examination, the labour having so far gone on steadily and well. The membranes were still entire. I now made out a breech

presentation. The os was well dilated and soft, the patient in good condition, and the pains regular and strong. The breech descended but very slowly, and seemed, notwithstanding powerful uterine action, much jammed in the pelvis. However, at 4 A. M. on the 14th, it had so far descended as to enable me to get a purchase on it with the fingers hooked round the groin, and with strong efforts I succeeded, at 5.30, in bringing down the breech and lower extremities. The cord was pulsating. Great difficulty was now experienced in extracting the head, but after some little force I had the satisfaction of bringing this down, and in a few minutes the child recovered and breathed comfortably.

All the lower part of the body and thighs were of a deep purple colour, as if violently bruised, but the child was otherwise well. The placenta was expelled in half an hour; and the mother subsequently did well.

I called five hours afterwards, and to my surprise found that the child had died suddenly about an hour before, while lying at its mother's side. No reason could be given for this, as a short time before it appeared quite well. No *post-mortem* examination was permitted. On weighing the child it was found of the enormous weight of 18 lbs. 3 oz. Its extreme length was 32 inches; the circumference of the head, 17¼ inches. These are *post-mortem* measurements. It was most perfectly formed and beautifully developed. The placenta was of proportionate size, and weighed 3 lbs."

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43. *On Some of the Exigencies connected with Preternatural Labour.*—Mr. Joseph T. Mitchell read (July 4) a paper on this subject, before the Obstetrical Society of London. He commenced by referring to the ill consequences which often follow the too strict adherence to the axiom in midwifery, that "meddlesome midwifery is bad midwifery." He set this forth by alluding to the history of cases that had come under his notice, in which the lives of some women had been placed in jeopardy, and the future comfort of others had been permanently destroyed, as well as of other cases, in which children had been born dead, whose lives would most probably have been saved had early manual or instrumental aid been applied. He then alluded to his strong objection to the use of the crochet in cases of craniotomy, and his custom in such cases to rely alone on the craniotomy forceps for delivering, relating a case that occurred in an extremely narrow pelvis in which the practitioner obstinately refused to use the embryotomy forceps, and would depend alone on the former instrument, by which he extensively lacerated the vagina, in consequence of its often slipping off from the head during the operation, which case terminated in the death of the woman, undelivered; the uterus having been ruptured, and the child having passed into the abdomen, when in all probability, had the embryotomy forceps been used, delivery would have been safely effected, as it had been on a former occasion. He next referred to the culpability which rests on every practitioner who undertakes to attend on any woman in her second or subsequent labour, who had previously been delivered by embryotomy or by the forceps, when the child had been born dead, without inducing premature labour between the seventh and eighth, or at the eighth month of gestation, as the nature of such former labours might seem to indicate. He related a remarkable case in which a practitioner had neglected so to act, and the complicated difficulties which followed, requiring the dismemberment of a very large child at the full period of gestation. The abdomen and chest were eviscerated, and then the lower half of the body was removed at the fourth dorsal vertebra, by which alone room could be obtained to reach the arms and head. The patient did well. She afterwards came under the author's care, and was delivered safely at premature periods on four different occasions, twice with great difficulty at seven months and a half gestation, and subsequently twice at six months and a half, on each occasion by inducing labour by puncturing the membranes, for which purpose he adopted a peculiar instrument, which he exhibited to the Society, and which instrument he had found useful also in rupturing the membranes in cases of placenta prævia attended with extreme circumstances. The instrument was made by Messrs. Millikin and Lawley, of the Strand. In the course of the relation of this case, the author stated that, on the occasion of the third labour, at seven months and a half gestation, when the head presented, delivery was effected by the forceps, and a child was born that lived fourteen hours; and on that of the fourth

accouchement, at the same period, when the arm presented, the woman could not be delivered except by dismemberment of the child. From these circumstances he deduced the conclusion that it was not wise to adopt the modern recommendation of delivery by turning in cases of small pelvic brims, whenever delivery can be effected by the forceps, as by that means a far greater chance would exist of delivering a living child than when turning is adopted. By the latter mode, the protracted pressure unavoidably made on the funis as the head is passing through the brim, is almost certain to occasion the death of the child; and in cases also where delivery can be effected by craniotomy, it is accomplished with less distress to the mother than by turning. The author also referred to the fatal consequences to children which often follow doubtful or incorrect diagnosis of presentations in early labour, especially in cases where delivery can only be effected by turning, which he showed in the history of a case in which there was the presentation of the abdomen, with the child doubled up, the head resting on the sacrum, and the hips on the pubis. In this position the practitioner allowed the case to remain for nearly three hours, not knowing the character of the presentation, and what it necessitated, the woman all this time suffering under violent expulsive labour, by which the child was killed; whereas, had turning been adopted at the commencement of this period, which would then have been a perfectly easy operation, the os uteri being then fully open, the child would, doubtless, have been born alive.—*Med. Times & Gazette*, July 14, 1860.

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44. *Uva Ursi in certain Cases of Extremely Slow Labour.*—Dr. A. GAUCHET has proposed and employed the *uva ursi* in certain cases of tedious labours which are usually treated by ergot of rye. He calls attention to the dangerous consequences which sometimes follow the employment of the latter drug, and thinks that the *uva ursi* will be found equally useful, and at the same time less violent in its operation. He relates a case of tedious labour in which he administered *uva ursi*, four drachms of the leaves being infused in a pint of water, and a cupful of the infusion being given every half hour. The effect of the medicine was to increase the force and frequency of the uterine contractions, and the labour terminated a few hours after the first dose had been given. Dr. Gauchet gives another case of imperfect and irregular contraction of the uterus after labour, in which case the *uva ursi* seems to have had the effect of causing regular contraction of the organ, and the patient recovered without any bad symptom. Dr. Gauchet has also tried this remedy in nine cases of tedious labour, all of which terminated successfully, and he therefore believes that this new plan deserves the attention of practitioners.—*Brit. and For. Med.-Chir. Rev.*, July, 1860, from *Bull. Gén. de Thérap.*, June 15, 1859.

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45. *Intra-Uterine Fractures.*—Mr. B. E. BRODHURST read a paper on this subject before the Royal Med. and Chirurg. Soc. (March 27, 1860). He commenced by referring to some points of distinction which have been observed in fractures in utero. He stated that fracture might be simple or compound—disunited or reunited at birth; or that solution of continuity might be owing to imperfect ossification and congenital rickets. Having alluded to these several varieties, he proceeded to remark especially on reunited fractures in utero; and he quoted cases from Ploucquet, Kopp, Devergie, Carus Schubert, Sachse, and Moffat; relating, also, the cases which had occurred in his own practice. The causes of intra-uterine fracture were lastly considered; and it was stated that neither contre-coup nor compression by the walls of the uterus could act so as to produce fracture, so long as the membranes—the chorion and amnion—remained entire; but there was reason to believe that intra-uterine fractures occurred as effects of physical injuries—that the origins of these fractures and of congenital distortions were similar, and that they were occasioned by abnormal muscular action. Two cases of congenital double club-hand and double club-foot were adduced as examples of the mode in which abnormal muscular action and distortion are induced in the fœtus; and, moreover, the author stated his belief that, in these cases, whether of fracture or distortion, the effect varies as the cause varies, and that temperament or other like condition may probably also modify the effect.—*Med. Times and Gaz.*, April 7, 1860.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

46. *Sudden Death, without any adequate Post-mortem Appearances.*—Mr. J. Z. Laurence, communicated to the Harveian Society (May 3, 1860), the following case and interesting remarks:—

"On the 24th of April, the housemaid in a medical man's family was sent out to fetch the beer, when, within ten minutes afterwards, she was found by the cook lying apparently dead in the scullery. I saw her myself in about another quarter of an hour. There was no action of the heart, no breathing, no sensibility; the body was still warm; the face livid and swollen. The only symptoms observed during life were that, for about a week before her death, she suffered from earache, appeared unusually indolent and stupid, and at times complained of faintness.

"*Post-mortem examination*, about twenty-two hours after death. The body was large, finely developed, very fat. Cadaveric rigidity was strongly marked in the limbs, and the firmly clenched lower jaw. The left ventricle of the heart was filled with dark fluid blood, and was firmly contracted; the right was flaccid and collapsed, containing but a very small clot. The muscular substance was apparently normal. The heart was altogether small in proportion to the body. The lungs were slightly congested. Between the two openings of the stomach was an oblong patch of fine punctiform florid injection in the lines of the rugæ. It contained an undigested meal of some stewed steak, of which the patient had partaken shortly before death. No poison of any kind was found in a careful analysis instituted by Mr. Rodgers, at the request of the jury. The intestines were not opened; their peritoneal coat was covered with congested veins, but in no very marked degree. The liver was somewhat congested. The spleen was soft and congested. The kidneys were very much congested. The uterus, ovaries, and Fallopian tubes, were much congested. (She was menstruating at the time of her death.) The superficial veins of the brain, as those of the medulla oblongata, were turgid with dark blood. There was a slight amount of serum beneath the arachnoid (which was somewhat opaque here and there), especially in the basilar fossa. The brain-substance itself was perfectly normal. The larynx, trachea, and œsophagus were healthy, and contained no traces of any food in them.

"*Remarks.*—This case is interesting in medical jurisprudence, in two points of view: first, for the unusual precision with which the entire suddenness of the death could be fixed; second, for the total absence of any *post-mortem* appearances usually found in cases of sudden death (such as heart-disease, bursting of aneurisms, etc.). In the *Annales d'Hygiène Publique* for 1838 will be found a paper by Devergie entitled 'De la Mort Subite,' in which, with other causes of sudden death, he signalizes that by syncope, which he had found to occur three times in forty cases. Dr. Tourdés reported to the scientific congress meeting held at Strasbourg in 1842, that he had met with this cause of sudden death once in twenty-six cases. It appears to be identical with the 'idiopathic asphyxia' of Chevalier. Devergie, in the paper above referred to, gives the following as the *post-mortem* appearances he found in his three cases of death from syncope. '1. The absence of all congestion of the organs. 2. The normal state of all the organs. 3. The existence of about an equal quantity of blood in the right and left cavities of the heart, regard being had to their respective sizes. 4. Perhaps the coagulation of the blood in the fibrinous state.' As another cause of sudden death, Devergie further indicates that arising from cerebral congestion, which may, he says, be limited to the meninges. In illustration of this, he relates the case of a man aged 63, who, having only complained of a slight headache in the morning, took a good breakfast, after which he slept for two hours, and, on awaking, suddenly died. No congestion of the brain-substance was found; there was an old apoplectic clot in the left corpus striatum; there was great congestion of the meninges of the brain and spinal cord.

"Directing attention now to the condition of the stomach in our case, we may naturally ask ourselves whether the undigested meal, or the patch of injection on its coats, may have had anything to do with the cause of death? As regards

the latter, no one would, I think, after the researches of Dr. Yellowly and others, attach any great independent value to mere vascularity of the gastric mucous membrane. The undigested meal may perhaps possess rather more significance. The deceased seems to have been in the habit of 'bolting' her meals very rapidly. The stewed steak found in her stomach, I am informed, she partook of stealthily —and therefore probably hastily—before her proper dinner, shortly before death.

"Dr. Taylor, at p. 152 of the second edition of his work on *Poisons*, has cited several instances of persons dying quite suddenly, with nothing to account for death but a distension of the stomach; but I noticed no such distension in the present case. We may not unreasonably connect these conditions of the stomach with the syncopal affection. Professor Weber has shown that irritation of the pneumogastrics will stop the heart's action; and my distinguished friend and colleague, Dr. Brown-Séquard, has further shown that crushing the semilunar ganglia has a similar effect on the heart, provided the great splanchnic and pneumogastric nerves remain intact.

"I should feel disposed to regard the present case as one of a mixed nature, presenting some of the signs of syncopal asphyxia, others of apoplexy. Explain it, however, as we may, it still remains one of considerable interest, proving as it does that, under certain (as yet very imperfectly understood) circumstances, death may occur suddenly, without leaving any traces at all adequate (in our present state of knowledge) to account for the fatal result."—*British Med. Jl.*, May 19, 1860.

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47. *Opium as a Remedy in Poisoning by Datura.*—Some years since, Dr. T. ANDERSON, Assistant Surgeon Bengal Army, propounded the doctrine that opium and belladonna exert an opposite influence on the human system, and thus one may be used to counteract the other, even though administered in a poisonous dose. He is also convinced that the converse doctrine must be true, viz., that opium will counteract the action of belladonna, and of all the solanaceæ with like properties, as the datura, hyoscyamus, &c. In support of this view he relates the following case:—

A Sepoy was found by his companions lying by the roadside near Furrackabad, in a state of high delirium, and was brought to the hospital boat. On inquiry, I learned that he had been seen partaking freely of sweetmeats (the Hindoo eats them by pounds weight at a time) in the Furrackabad bazaar, some hours before he was found; and the men at once ascribed his condition to poison administered in the sweetmeats. The many varieties of native sweetmeats poisoned with datura and bhang, one of the preparations of Indian hemp, are well known in all large Indian towns, and are used to cause death or stupefaction, so complete as to allow of robbery or violence being committed; and a Sepoy, when in undress, usually displays valuable ornaments, sufficient to tempt a thief or thug. Even without this knowledge, the symptoms were so marked that I had no difficulty in forming my opinion of the cause of the patient's condition. I saw him immediately after he was brought to hospital, and found him in the following state: He was reclining on his back in bed, in a wakeful muttering delirium, unbroken by an interval of even transitory consciousness. His face was much flushed; the eyes were reddened and wandering, and the pupils were brilliant, widely dilated, and quite insensible to light. The pulse was much accelerated and small. He continually twitched his extremities, but especially his hands, and every now and then pinched and tugged at the bedding. Though utterly unconscious to real external objects, the brain was evidently active, with continual visions before the eyes, as his mutterings and frequent clutchings referred to imaginary objects. He was not in the least degree violent, and required no restraint, but merely an attendant to keep him covered during his restless tossings about.

He swallowed any liquid put into his mouth, but exactly as patients in delirium tremens do, in one convulsive mouthful.

In an hour after his arrival at the hospital, I began the administration of opiates, and prescribed one grain of the muriate of morphia in solution, to be given every hour, beginning the first dose at 2 P. M. I watched the effect most closely, taking the state of the pupil as my principal guide.

Eight doses were given before I could observe any result. After the eighth

dose, about 11 P. M., I noticed that his attention could be fixed for a moment, and that the muttering could be arrested by loudly talking to and shaking him; that the hands were less tremulous.

Still, no impression had been made on the widely dilated pupils, and he was evidently as wakeful as ever. I therefore, before retiring for the night, directed the continuance of the morphia until the morning, with orders to discontinue it so soon as sleep threatened to come on. I did not see him again till six in the morning, when I found all his delirium gone, the tremulousness much relieved, the pupils almost reduced to their natural state, and the patient surrounded by his delighted comrades, who were listening with wonder to the native doctor relating to them how "dhutona" poisoning had been cured by "apheem" (opium.)

Though he was able to talk, and was nearly well, I considered it advisable to persevere with the treatment until sleep had been obtained. This did not supervene until three doses more had been given.

After several hours' sleep, he awoke perfectly well; and after two days more detention in hospital, he was dismissed "fit for duty;" and while I remained with the regiment, was never again in hospital. In all, 15 grains of the muriate of morphia had been administered in 18 hours; and with reference to the largeness of the amount, I took care to inquire concerning the habits of this Sepoy, and found that he used opium in no form whatever.

In this case, as well as in the experiments published in my former paper on this subject, the amount of the narcotic used as the antidote, whether belladonna or opium, to restore the normal condition of the brain, would, by itself, have been a poisonous dose. This tolerance of the one poison, produced by the presence of the other poison in the system, seems to me to be a strong additional argument in favour of my theory.

It also induces me to go further, and to believe, that all narcotic poisons with distinctly opposite actions, and destroying life by their effects on the nervous centres, will, when present in the body together, counteract each other, until eliminated from the system by the excretions.

For example, the distinct coma-producing narcotics, such as opium, will, I believe, in all cases be counteracted by the poisonous solanaceæ; and, as a remedy to the action of strychnine, I would hope for success from the use of conia, or preparations of hemlock itself; and, of course, in all these cases the opposite would hold true.—*Edin. Med. Journ.*, June, 1860.

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48. *Study on the Slow Poisoning by Preparations of Lead, and of its Influence on the Product of Conception.*—M. Constantin Paul, an *interne* of the Paris hospitals, has drawn up a valuable memoir on the effects of lead-poisoning upon the product of conception. We will relate one of his observations as an example, and present a summary of his researches. In February, 1859, a woman entered the Necker Hospital, who had been for eight years working as a polisher of printing type. She was suffering from metrorrhagia, and had an evident saturnine cachexia. She had enjoyed good health, and had been delivered of three children, happily before taking to the occupation of polisher. Since then her health has been much shattered by lead-diseases. Three months after entering upon this trade she had a first attack of colic, and four years later another. At this time she became pregnant, and bore a dead child. Three years later still, she bore a child which died at the age of five months. She had eight pregnancies all terminating in abortion at two or three months, attended by excessive metrorrhagia. She recovered in M. Bouley's wards under tonic and restorative treatment.

This case led M. Paul to extended inquiries in the type-foundries and elsewhere. He found that those women almost alone who handle the type are affected by saturnine diseases. In a first series of observations, he found that 4 women had had 15 ascertained pregnancies—of these, 10 ended in abortion, 2 in premature labour, 1 in still-birth, and 1 child died within twenty-four hours.

In a second series of cases, 5 women had borne an aggregate of 9 children at term before exposing themselves to lead, and had had no abortion or other accident of pregnancy. Since exposure to lead they had 36 pregnancies; of these, 26 ended in abortion at from two to six months; 1 in premature labour; 2 in

still-birth; 5 children died, 4 of which within the first year; and 2 children were living, 1 being puny and ailing, the other only three years old.

In a third order, a woman had, during her employment in a type-foundry, five pregnancies, all ending in abortion. She quitted the business and bore a healthy child.

In a fourth order, is the case of a woman who, having left the trade for two periods, bore during these intervals of freedom two healthy children; returning to the trade had two abortions.

In a fifth series M. Paul shows that the same disastrous influence is felt when the fathers handle lead. In 7 cases, every woman had an abortion; of 32 pregnancies occurring during the husbands' exposure to lead, 12 children were born prematurely. Of 20 living children, 8 died in the first year, 4 in the second, 5 in the third, 1 after the third year, 2 remained living.

In a sixth series the author shows that where the lead affection was less marked there was a corresponding diminution of the injurious effect upon the product of conception.

M. Paul has not neglected to check these results by comparing them with the history of the general population. The general official vital statistics are not in our opinion entitled to unreserved confidence as an element in a scientific pathological inquiry; but there can be little hesitation in admitting that pregnancy, under ordinary circumstances, is much less frequently abortive than M. Paul has so clearly ascertained it to be amongst the population working in lead. —*Brit. and For. Med.-Chir. Rev.*, July, 1860, from *Archives Gén. de Méd.*, May, 1860.

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49. *Intra-Uterine Emphysema of the Lungs.*—Prof. HECKER relates (*Virchow's Archiv.*, 1859) the following very important case in reference to the medico-legal questions of live or still-births: During his residence at Marburg he observed the following circumstances: A primipara, aged twenty-two, was in labour at 3 A. M. of the 7th of March, having suffered light contractions for two days previously. The conjugate diameter was defective by an inch. The liquor amnii escaped at 11 A. M., the os uteri being now partially open. The pains were very inadequate, and at this time the fœtal heart, which had been hitherto plainly audible in the left side of the uterus, could no longer be heard. This was the state of things at 4 A. M. of the 8th, when the labour began to proceed rapidly, the child being born without assistance at five o'clock. It was born showing no trace of motion of the head, or of breathing-movement; no efforts at resuscitation availed, it was quite dead. The body was examined six hours afterwards. It weighed seven pounds. There was no trace of putrefaction. The lungs were of large circumference, filling the chest, partly covering the pericardium; they were brighter than usual, gray-red, and felt spongy. They floated freely in water; they were extensively emphysematous.—*Brit. and For. Med.-Chir. Rev.*, July, 1860.

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50. *Rape committed during Magnetic Sleep.*—A case of this is recorded in *La Presse Médicale de Marseille.* A girl, 18 years of age, believing herself to be sick, consulted a man who professed to cure diseases by animal magnetism. For some time she went to him daily. After about four months and a half she perceived that she was pregnant, and complained to the police authorities, who consulted Doctors Costa, Director of the School of Medicine, and Broquier, principal Surgeon, to give an opinion: 1st. Whether the girl was pregnant, and the period of utero-gestation, and, 2d. Whether she could be violated and made a mother against her will. These physicians ascertained that the girl was pregnant, and that utero-gestation had not advanced further than four or four and a half months, and, supported by the report made to the Academy of Medicine by M. Husson, in 1831, concluded since it is demonstrated that a subject under the influence of magnetic sleep is insensible to all tortures, it seems rational to believe that a young girl may submit to coition without voluntary participation in the act, without being conscious of it, and of course without being able to resist.

This opinion is concurred in by M. Devergie, of Paris.—*Gazette Médicale de Paris*, June 16, 1860.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of Twins, one of which was Born enveloped in the Membranes. By E. W. Woodson, M. D., of Woodville, Ky.—I was called, August, 1859, to see a negro woman who had given birth to twins. The second child was born enveloped in the unbroken membranes. The midwife who attended the case, supposing the child to be dead, deposited it in a vessel without rupturing the membranes, and set it away until I arrived, which was at least fifteen minutes after the delivery.

As soon as I entered the room she related what had happened, and presented the vessel for me to inspect. I at once ruptured the membranes and found the cord still pulsating. I removed the child and succeeded in resuscitating it by using friction, artificial respiration, &c. I allowed the cord to remain untouched as long as it pulsated. The child was perfectly livid and apparently dead when I commenced to work with it. The breathing was at first gasping and at long intervals, but finally became regular and quiet. The child lived and did well.

This case proves that our efforts should always be prompt and unremitting to bring to action the feeble spark of life in such cases, although the case may appear hopeless, and hence I report it.

Injury to the Face from the Kick of a Horse. By J. S. Conkey, M. D., of Antwerp, N. Y.—December 22, 1857, I was called to see Mr. J. R., aged 56 years, who had been badly injured by a kick from a horse. Found him bleeding profusely from the anterior and posterior nares; his nose completely flattened to his face, the ossa nasi being broken into fragments. On examining the case more closely I found a fracture of the superior maxillary bone extending from where the nose and upper lip meet to the throat, fracturing the septum narium and sphenoid bone, thus separating the whole palatine arch, which, including all the teeth, could be easily and freely moved about in the mouth.

After adjusting the nasal bones, and properly securing them in place, I fitted a piece of soft wood to the front teeth, letting the ends project a little from each corner of the mouth. To this piece of wood I applied a strong tape, and, passing the ends over the head, tied them firmly, thus completely securing the fractured portions in apposition. The bleeding was gradually stopped by the formation of coagula in the nose, which were allowed to remain till all tendency to hemorrhage had ceased. The case progressed favourably, and in four weeks the dressings were removed and the patient able to be out. In ten weeks from the date of the injury he was able to work on his farm, and could use his teeth for masticating purposes as well as ever. He now reports himself entirely well, and there is no deformity left.

DOMESTIC SUMMARY.

Caffeine in Opium-Coma.—In our preceding number, p. 212, will be found a case, by Dr. H. F. CAMPBELL, of narcotism from opium, in which caffeine administered by injection seemed to exert a beneficial influence. Dr. C. has since published (*Southern Med. and Surg. Jour.*, Aug. 1860) a second case, in which he has used this article, but with a less satisfactory result.

The subject of this second case was a man about 28 years of age, apparently of good constitution, who had probably taken nearly three ounces of laudanum fifteen hours before seen by Dr. C. At this time Dr. C. found the man entirely unconscious; face of a dark purple hue, as were also his hands and feet; the respiration not quite four to the minute, and obstructed by accumulation of mucus; pulse feeble, about 100; muscular system completely relaxed.

"The condition of the patient," says Dr. C., "the necessity of constantly provoking respiration, and also the little probability that any laudanum yet remained in the stomach, caused us to abandon the idea of using the stomach-pump. Emetics, of course, were out of the question, and we at once resorted to the application of ice to the scalp, and pouring ice-water, from a distance, upon the head, while we sent for a drachm of caffeine, and a small syringe. As soon as these arrived, we poured out in the palm of the hand what we supposed to be about twenty grains of caffeine, dissolved it in two ounces of cold water, and introduced it into the rectum by means of the syringe. The syringe being small, three applications were made at short intervals. The whole of the alkaloid was not dissolved. By an estimate made subsequently, calculating what had been lost, the patient had taken near *twenty-five grains of caffeine* in the three applications.

"The caffeine wss administered at twenty minutes before four o'clock, at which time, as we have said, the respiration of the patient was *scarcely four to the minute*, and constant efforts were necessary, in the way of slapping and shaking to provoke him to inspire. At fifteen minutes after four (35 minutes after the injection), his respiration was found to be effected with less effort and more regularity—and, on counting it by the watch, it numbered eight to the minute. The skin, even now, began to present less of the cerulean tint. In one hour after, the respiration had risen to twelve, and shortly rose to sixteen to the minute, when the skin was nearly of the natural hue, though the nails on both hands and feet remained still of a purplish cast.

"Slight spasmodic movements in the fingers were now observed, and also some occasional subsultus in the muscles of the forearm—the under lip, which before was hanging, now became elevated and slightly compressed against the teeth. When the hand of the patient was held, and an attempt made to extend the arm at the elbow, decided muscular resistance was observed. The lid of the left eye was also observed to be raised and let down rapidly once or twice.

"The pulse had now become full and somewhat resisting, and the action of the heart, as observed at the chest, tumultuous. On being raised, the patient, once, made a noise slightly resembling a groan, but, from the beginning to the end, he did not once manifest the least consciousness.

"For a short time after the improvement in the respiration began, the mucous rale seemed somewhat to diminish, and his breathing, were it not for a certain jerking, resembled very neary a man in deep, healthy sleep. The rale now, however (half-past 7 o'clock), became more and more obstructive, the gurgling reaching up into the throat and threatening momentarily to strangle the patient. It was now plain that he could not survive, and, on turning him upon the right side, a bloody mucus bubbled out of the nostrils. The number of the respirations was at this time twenty to the minute, when counted by the watch. The entire surface of the body was intensely hot and remained so to the time of the patient's death, which took place at fifteen minutes before nine o'clock P. M. He seemed to die from the accumulation of the bloody mucus in the bronchial tubes and larynx. During the whole time, from the first moment of our seeing him till the time of his death, the application of ice was made constantly to the

head of the patient, and also mustard plasters were applied to the spine and to the extremities.

"A superficial glance at the foregoing case might perhaps impress the reader with the conviction that the confidence which we expressed, in our former report, in caffeine as an antidote in opium-coma, was somewhat hasty and misplaced. A more deliberate consideration, however, will remove such an impression. When we reflect on the amount of the opium taken, the length of time during which the patient had been left to its toxic influence, and the destructive ravages which had been made during that time, we certainly, on the other hand, must feel great surprise at the amount of modification the caffeine was seen to produce under such disadvantageous circumstances. The respiration, in a space of time less than one hour, was raised from four to sixteen in the minute. The colour of the skin, under its influence, was changed from an almost indigo hue to that of the natural complexion, and the muscular relaxation was replaced by a fair degree of tonicity accompanied by occasional twitchings. The mode of death, too, was not such as is seen in the demise from the unmodified effects of opium, when the respiration becomes gradually slower and slower till it ceases altogether, but at the time of our patient's death, his respiration numbered twenty per minute, and he died apparently *drowned* by the accumulation of the viscid mucus in the air-passages, doubtless the result of the long-enduring pulmonary congestion occurring previous to the administration of the caffeine."

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Popliteal Aneurism successfully treated by Pressure applied in a Novel Manner.—Dr. T. Clarkson Moffat relates (*American Med. Times*, 14 July, 1860) the following interesting case of this.

"On the 22d of March, there came to the Seaman's Retreat, a coloured man—a sailor by profession, a native of Pennsylvania, aged 51 years. He had arrived from Calcutta in the previous month, and came to the hospital for the cure of rheumatism, with which he had been considerably afflicted for about eight months. He complained chiefly of the right knee-joint, which, he said, was very much swollen, especially behind, and for which he had been using a variety of remedies, both internally and locally. He had followed the sea for a great many years, and had been addicted to most of the vices which are common among men of his class. His complexion was that of a dark mulatto. He was about five feet ten inches in height, thick set, broad shouldered, and weighed about 180 pounds. The affection of the knee-joint was of about six months' standing—beginning first as a small tumour between the hamstrings, and gradually increasing without occasioning much inconvenience except stiffness. He attributed the difficulty to a wrench in lifting, at which time he experienced a sensation as of something giving way. He was found, on careful examination, to have a pulsating tumour in the right popliteal space, of the size of a large orange. On consulting with Dr. Isaacs, of Brooklyn, it was decided not to ligate the femoral on account of suspected atheromatous disease, but to try first the effect of compression as devised and successfully practised by Dr. Fountain. In a few minutes, with the aid of a carpenter, we erected a structure consisting of a stick of timber about four inches in thickness by eight in width—one end of which was secured to the top of an upright post of the same dimension. This post was fastened firmly to the floor, and lashed to the iron crossbar at the head of the bed. It was about six feet in height, and bevelled at the top to receive the stick first named; these were firmly nailed together. The large piece of timber about twelve feet in length rested at the lower end upon a strong table, placed at the foot of the bed, thus forming an inclined plane over the bedstead placed lengthwise underneath it. The patient was then placed upon the bed in the supine position, with his leg slightly flexed—somewhat everted—wrapped in thick layers of cotton, and placed in a long fracture box; a compress made of adhesive plaster wound tightly into a roll, about an inch in length, and three-eighths of an inch in diameter, was then placed upon the femoral at the inferior angle of Scarpa's space. Upon this rested the lower end of a perpendicular piece of wood about an inch square, the upper end of which was bevelled to meet the inclined plane before described.

"The pressure was commenced at eight in the morning. The degree of pres-

sure was regulated by drawing the upper end of the perpendicular down the inclined plane, to a greater or less extent, as might be required. The hand of the operator was kept upon the stick, and thus secured an equable pressure, even though the patient moved his limb, as he sometimes did a very little. A second compress and upright were placed over the artery as it crosses the horizontal ramus of the pubes, and when the pain from pressure in one was too great to be borne comfortably, the other was used, and thus alternately compression was kept up until five in the evening, when pulsation could be no longer felt in the tumour.

"The patient complained but little for the first two hours. Three doses of opium were given, which gave him so much ease that he slept somewhat before the operation was completed. Moderate compression was kept up for eight hours longer, after which the patient was kept for several days quietly upon his bed. The tumour, at first very hard and slightly tender, gradually diminished in size; his leg and foot, in which he had experienced benumbing and prickling sensations, gradually regained their natural feeling, and on the 20th of April following he left the Institution perfectly free from any trouble of the joint—with only a small walnut-sized tumour in the popliteal space. We have had no tidings of him since.

"The great simplicity of this plan of compression, which is always available, must be palpable to every one. That it is far easier for the patient, and unspeakably more so for the operator, cannot be questioned. It would also seem reasonable to infer that the compression itself, made at but one point, is more uniform and certain than has yet been secured by any other method."

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Fracture of both Femurs by Muscular Spasm.—Dr. F. D. LENTE records (*American Med. Times*, July 20th, 1860), an example of this rare accident. The subject of the case was a boy 12 years of age, subject to severe epileptic convulsions.

"On *April* 10, 1859, his spasms had been recurring every few minutes with great violence; during one of them, while he was held in bed by one of the family by the arms and shoulders, a number of others being in the room, a loud snap was heard by all present. It was thought that the hip "had slipt out of place," and upon examination by the parents, what they supposed to be an extensive swelling was perceived at the upper part of the left thigh. Upon being called in soon after, I recognized it at once as a fracture of the femur; its seat is the junction of the upper with the middle third of the bone. It is stated by the friends, that, at the instant of its occurrence, the thigh was flexed with great force, by the intensity of the spasm on the pelvis, and the fracture was evidently effected by the powerful action of the flexor muscles of the thigh. Assisted by Dr. Richardson, I administered ether, extended the limb, and applied a thick pasteboard splint to the thigh, carrying the bandage around the pelvis, the only idea being to secure union with the least possible inconvenience to the patient, with little regard to shortening.

"*June* 1. Union of the fracture is firm, with considerable bowing and shortening, as was anticipated. A pasteboard splint encircling the thigh, and coated with a solution of shellac to prevent injury from urine and other fluids, is still kept on to prevent a repetition of the fracture, as he still has the convulsions.

"*Dec.* 13. The *right* femur was fractured to-day in precisely the same manner as was the left. Put it up in the same manner. *Jan. 29th.* Patient's health has been gradually failing since the occurrence of the last fracture, and to-day he died from gradual exhaustion. No attempt at union of the fracture has taken place. No autopsy could be procured."

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Case of Spina Bifida successfully treated by Iodine Injections.—Dr. BRAINARD records (*Chicago Medical Journal*, Aug., 1860) the following case of this, the sixth in which he has practised this mode of treatment.

June 6th, 1860, a female child from Michigan was presented to me for treatment. It was eight months old, well formed and healthy in every respect excepting a tumour situated over the upper part of the sacrum. This tumour measured six inches in circumference around the base, eight inches around its

largest part, and was elevated two inches above the surrounding skin. Its surface was irregular, resembling that of a tomato, a piece of the colon when inflated. It was translucent, elastic at points, and at others the walls were firm like the tissue of cicatrix. A great portion of its contents could be pressed into the spinal column without giving rise to any other inconvenience than making the child cry.

6*th*. Present Dr. Haydock. I passed an exploring trocar into the sac, through a part of the covering, which was thick, and drew off about one ounce of fluid. I then had the neck of the sac pressed on each side, and injected through the canula a solution containing $\frac{1}{8}$ gr. of iodine, and $1\frac{1}{2}$ grs. iodide potass, in a drachm dist. water, intending to let it flow back through the canula. This, however, it would not do, and I injected two drachms of dist. water, which was allowed to remain. The child, during the operation, was kept under the influence of chloroform. The operation was done at 6 o'clock P. M.

8 o'clock. Skin hot; child starts in sleep as if frightened; takes the breast.

7*th*. 8 o'clock A. M. Has not slept well; has perspired freely; taken the breast; tumour flaccid.

6 P. M. Seems perfectly well; tumour tense and redder than before the operation.

8*th*. 12 M. Child seems perfectly well; urinates more than natural; tumour tense and red; child laid on the face and side.

9*th*. Tumour red and firm; child perfectly well.

10*th*. Tumour flaccid and pale; applied bands of gum elastic around it.

14*th*. Tumour much reduced. Introduced into a point where the skin is thick and sound, a common hydrocele trocar, and drew off about two drachms of serum tinged with blood from wounding the internal membrane; washed out the cavity with dist. water, and injected the solution used before, as much as could be pressed in, then washed it out with distilled water and applied isinglass plaster.

During the operation a tape was tied tightly around the base of the tumour so as to cut off the connection with the spinal canal, and the child kept under the influence of chloroform.

The operation seemed at first to produce no sensible effect. About an hour afterwards the child had coldness of the feet and hands. This was followed by some reaction, and this by sweating. The next day there was some redness and fulness of the tumour which had entirely lost its elasticity.

The patient was seen by Drs. Powell and Paoli.

For three days the tumour was tense, firm, and red. After that time it became pale and flaccid.

25*th*. Applied pressure by a gum-elastic band around the body, and a band of the same material around the tumour. While this remained it was reduced to about one-third its former size.

30*th*. The tumour is pale, wrinkled, firm, not fluctuating; appears quite solid. Pressure continued by a strip of adhesive plaster passed circularly around it, and the gum-elastic band made for a hernia truss passed around the pelvis, so as to exercise compression upon it.

July 6*th*. Tumour forms only an innodular mass diminishing in size. The patient was allowed to return home with directions to continue the compression as long as might be necessary to efface the walls of the sac.

"In any similar case," Prof. B. says, "I should desire: 1st, to tap the sac and draw off the serum; 2d, to make compression so as to prevent the iodine from entering the spinal canal; 3d, inject a solution of iodine, of the strength of five grains, and thrice that quantity of iodide of potash to the fluidounce of distilled water; 4th, withdraw the injection, wash out the sac with distilled water; 5th, re-inject the serum, or fill the sac with distilled water. The puncture should be carefully closed after withdrawing the canula.

"When the tumour is not pediculated, so that the solution may be prevented entering the spine, then the rules I gave in the article referred to, seem to me judicious.

"In the case herein reported, no symptoms were produced except those of an

over-dose of the solution, diaphoresis, and diuresis, and except for the difficulty of getting rid of the firm walls of the tumour after the sac was obliterated, the case was not more difficult to treat than a hydrocele."

—

Endermic Use of Animal Fat in Typhoid Fever.—Dr. P. DELACY BAKER, of Alabama, extols (*Southern Medical and Surgical Journal*, June, 1860) the endermic application of animal fat in typhoid fever. He conceives that it acts—1st, by keeping "in its normal activity the eliminating function of the skin;" and 2d, by its introduction "into the system by absorption from the skin [it] acts as a direct nourishment to the nervous tissue, and also, by supplying material for combustion, prevents that destruction of tissues which otherwise would of necessity result in the course of a continued fever, or even, in health, without sufficient nourishment to supply the constant waste going on in the animal economy."

Dr. B. states "that this method of softening the skin and restoring its healthy function was first suggested to me in 1854, then just entering the practice, by Dr. E. L. Antony, of Waynesboro', Ga. I was at the time suffering from an attack of typhoid fever, with Dr. A. in attendance. He then declared inunction to be the best and most reliable of all diaphoretics, and during the progress of the disease had it practised upon my skin to the extent of three pints of olive oil. He, however, at the time expressed his preference for an animal fat in the shape of a 'bacon rind,' referring its more efficient action to the fact of its containing salt. I have though, since, by observation and experiment, been taught that the bacon rind is preferable because it is an animal fat, and that the great benefit derived from its endermic use is attributable but in a small degree to its diaphoretic effects, compared with its vastly more important eutrophic property, and that the reason why, in this connection, animal fats are preferable to vegetable oils is that the former are much more easily assimilated to the wants of the system."

—

A Work by Professor Hodge on Diseases of Females.—We learn with great pleasure that Professor Hodge, of the University of Pennsylvania, has prepared a work on the Diseases of Females. This work will embody the peculiar modes of treatment which the long and very extensive practice of the Professor has led him to adopt, and which have not yet been published, except in his lectures to his classes. The profession will very anxiously look for the appearance of this work, which we learn is now rapidly passing through the press, and will be speedily published.

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UNIVERSITY OF PENNSYLVANIA—MEDICAL DEPARTMENT.

NINETY-FIFTH SESSION (1860-61).

WILLIAM GIBSON, M. D., Emeritus Professor of Surgery.
GEORGE B. WOOD, M. D., Emeritus Professor of Theory and Practice of Medicine.

SAMUEL JACKSON, M. D., Professor of Institutes of Medicine.
HUGH L. HODGE, M. D., Professor of Obstetrics and the Diseases of Women and Children.
JOSEPH CARSON, M. D., Professor of Materia Medica and Pharmacy.
ROBERT E. ROGERS, M. D., Professor of Chemistry.
JOSEPH LEIDY, M. D., Professor of Anatomy.
HENRY H. SMITH, M. D., Professor of Surgery.
WILLIAM PEPPER, M. D., Professor of Theory and Practice of Medicine.

WILLIAM HUNT, M. D., Demonstrator of Anatomy.

The Lectures of the Session will begin on the second Monday of October and close on the first of March.

Clinical Instruction is given throughout the Session, in the Medical Hall, by the Professors, and at the Pennsylvania and other Hospitals.

The Dissecting Rooms, under the superintendence of the Professor of Anatomy and the Demonstrator, are open from the middle of September.

The room for Operative Surgery and the Application of Bandages, &c., is open early in September and throughout the Session, under the supervision of the Professor of Surgery.

Surgical Demonstrator, C. S. BISHOP, M. D.

Fees for the Lectures (each Professor $15)	$105
Matriculation Fee (paid once only)	5
Graduation Fee	30

R. E. ROGERS, M. D., *Dean of the Medical Faculty, University Building.*

SAMUEL PRICE, *Janitor, University Building.*

MEDICAL COLLEGE OF VIRGINIA, AT RICHMOND.

SESSION OF 1860-61.

The Course of Lectures will commence on the first Monday in October, and continue until the 1st of March.

CHARLES BELL GIBSON, M. D., Professor of Surgery and Surgical Anatomy.
DAVID H. TUCKER, M. D., " Theory and Practice of Medicine.
BEVERLY R. WELLFORD, M. D., " Materia Medica and Therapeutics.
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The recent appropriation of $30,000 to this Institution by the Legislature of Virginia will enable the Faculty to enlarge the facilities for instruction in a most important degree. The illustrations in every department will be multiplied and improved, and a commodious Hospital is now in course of construction, in immediate proximity to the College, which will greatly extend the facilities for clinical instruction. Students will also have access to the wards of the Richmond Almshouse.

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PENNSYLVANIA COLLEGE—MEDICAL DEPARTMENT.

NINTH STREET, BELOW LOCUST, PHILADELPHIA.

SESSION OF 1860–61.

FACULTY.

B. Howard Rand, M. D.,	Professor of	Chemistry.
Henry Hartshorne, M. D.,	"	Practice of Medicine.
Lewis D. Harlow, M. D.,	"	Obstetrics, &c.
William S. Halsey, M. D.,	"	Surgery.
Wm. Hembel Taggart, M. D.,	"	Materia Medica.
James Aitken Meigs, M. D.,	"	Institutes of Medicine.
Wm. H. Gobrecht, M. D.,	"	Anatomy.

Theodore A. Demmé, M. D., Demonstrator of Anatomy.

The Session of 1860–61 will commence on Monday, 8th of October, and continue, without intermission, until the first of March.

The Rooms for Practical Anatomy will be open early in September.

A Medical, Surgical, and Obstetrical Clinic is held at the College every Wednesday and Saturday.

Each second-course Student is furnished with a ticket to the Pennsylvania or Philadelphia Hospital, *free of charge.*

Examinations are conducted daily by each Professor in his Department.

☞ Instead of the usual Introductory Lectures, there will be but *one general Introductory;* after which the regular Lectures of the Course will commence *without delay.*

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The Course preliminary to the Session of 1861 will begin on the 18th of February, and the *Regular Lectures* on the 18th of March, to continue sixteen weeks.

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COUNCIL.

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Frank H. Hamilton, M. D., Principles and Practice of Surgery.
James D. Trask, M. D., Obstetrics and Diseases of Women and Children.
R. Ogden Doremus, M. D., Chemistry and Toxicology.
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John C. Dalton, M. D., Physiology and Microscopic Anatomy.
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George R. Smith, M D., Demonstrator of Anatomy.

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Graduation	25 00

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Edward Reynolds, M. D.	J. Mason Warren, M. D.	John Jeffries, M. D.
D. H. Storer, M. D.	S. D. Townsend, M. D.	Charles G. Putnam, M. D.
J. B. S. Jackson, M. D.	Morrill Wyman, M. D.	Henry J. Bigelow, M. D.

At the Annual Meeting of the Committee, on Wednesday, August 1st, 1860, a premium of Ninety Dollars, or a gold medal of that value, was awarded to John Bell, M. D., of New York, for the best dissertation on the question—

How far does the Microscope assist us in Surgical Diagnosis?

The other premium of the same value was awarded to David W. Cheever, M. D., of Boston, for the best dissertation on the question—

The Value and the Fallacy of Statistics in the Observation of Disease.

The following questions are proposed for 1861:—

1. *Excision of Joints.*
2. *Diagnosis and Treatment of Chronic Pleurisy.*

Dissertations on these subjects must be transmitted, post paid, to Edward Reynolds, M. D., *on* or *before* the *first Wednesday* of April, 1861.

The following are the questions proposed for 1862:—

1. *How far does the Microscope assist us in Surgical Diagnosis?*
2. *On Nausea and Vomiting, as Symptoms—Under what circumstances do they occur, and what indications do they afford as to the seat and character of disease?*

Dissertations on these subjects must be transmitted as above, *on* or *before* the *first Wednesday* of April, 1862.

The author of the best dissertation considered worthy of a prize on either of the subjects for 1861 and for 1862, will be entitled to a premium of *sixty dollars*, or a gold medal of that value, at his option.

Each dissertation must be accompanied by a sealed packet, on which shall be written some device or sentence, and within which shall be inclosed the author's name and residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

The writer of each dissertation is expected to transmit his communication to the Chairman of the Committee, in a legible handwriting, within the time specified.

All unsuccessful dissertations are deposited with the Secretary, from whom they may be obtained, with the sealed packet unopened, if called for within one year after they have been received.

By an order adopted in 1826, the Secretary was directed to publish annually the following votes:—

1st. That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which premiums may be adjudged.

2d. That in case of publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith.

J. MASON WARREN,
Secretary.

Publishers of Newspapers and Medical Journals throughout the country are respectfully requested to notice the above.

JEFFERSON MEDICAL COLLEGE.

The next Session will commence on Monday, the 8th of October, with a general Introductory Lecture by one of the Professors. The regular lectures will begin the day after. The Session will terminate on the last day of February.

ROBERT M. HUSTON, M. D., { Emeritus Professor of Materia Medica and General Therapeutics.

Institutes of Medicine, etc., ...	By Prof. ROBLEY DUNGLISON, M. D.
General, Descriptive and Surgical Anatomy, .	" JOSEPH PANCOAST, M. D.
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Institutes and Practice of Surgery, . .	" SAMUEL D. GROSS, M. D.
Materia Medica and General Therapeutics, .	" THOMAS D. MITCHELL, M. D.
Practice of Medicine, ...	" SAMUEL H. DICKSON, M. D.

Demonstrator of Anatomy, . . ELLERSLIE WALLACE, M. D.

Clinics will be held regularly during September; and every Wednesday and Saturday in October, and during the course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the Class. During the year ending March the first, 1860, a vast number of medical and surgical cases were treated, and above *three hundred* operations were performed; amongst them many major operations—as amputation of the leg, extirpation of the upper jaw and mamma, and several cases of lithotomy.

The lectures are so arranged as to permit the student to attend the clinics of the Pennsylvania Hospital, and of the Philadelphia Hospital.

On and after the 1st of October, the dissecting-rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

FEES.

Matriculation, which is paid only once, ...	$ 5
To each Member of the Faculty $15, ...	105
Graduation, ...	30

ROBLEY DUNGLISON, M. D.,
Dean of the Faculty.

HARVARD UNIVERSITY.

MASSACHUSETTS MEDICAL COLLEGE.

THE Annual Course of Medical Lectures of Harvard University will commence at the Massachusetts Medical College, in North Grove Street, Boston, on the first Wednesday of November, 1860. The regular course will be as follows:—

D. HUMPHREYS STORER, M. D.,	Professor of Obstetrics and Medical Jurisprudence.
JOHN B. S. JACKSON, M. D.,	Professor of Morbid Anatomy.
HENRY I. BOWDITCH, M. D.,	Professor of Clinical Medicine.
OLIVER W. HOLMES, M. D.,	Professor of Anatomy and Physiology.
GEORGE C. SHATTUCK, M. D.,	Professor of Theory and Practice of Medicine.
HENRY J. BIGELOW, M. D.,	Professor of Surgery.
JOHN BACON, M. D.,	Professor of Chemistry.
EDWARD H. CLARKE, M. D.,	Professor of Materia Medica.

RICHARD M. HODGES, M. D., Demonstrator.

Clinical Medical and Surgical Instruction will be given at the Massachusetts General Hospital, with surgical operations.

Collateral special medical instruction will also be given at the Hospital by lectures and otherwise, by Drs. Bowditch, Abbot, and Ellis.

Abundant material is afforded for the study of Practical Anatomy. The room devoted to this department is open day and evening, and lighted by gas.

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Dalton's Human Physiology,	" 595
Dunglison's Medical Dictionary,	" 596
Erichsen's System of Surgery,	" 598
Flint on the Heart,	" 598
Fownes' Manual of Chemistry,	" 599
Gross's System of Surgery,	" 600
Gray's Anatomy, Descriptive and Surgical,	" 601
Habershon on Alimentary Canal,	" 602
Hamilton on Fractures and Dislocations,	" 602
Meigs on Diseases of Women,	" 605
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